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AUTHOR O'Connell, Dorothy, Comp.; And Others

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ABSTRACT

This research bulletin includes reports of research in progress or recently completed from March 1976 through August 1976. Each entry includes information concerning the investigators, purpose, subjects, methods, duration, cooperating groups, and findings (if available). The reports are listed under several topical headings: (1) Long-Term Research, (2) Growth and Development, (3) Special Groups of Children, (4) The Child in the Family, (5) Socioeconomic and Cultural Factors, (6) Educational Factors and Services, (7) Social Services, (8) Health Services. In addition there is a bibliography on child abuse and neglect which includes ERIC documents, books, journal articles and pamphlets. (SB/MS)

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RESEARCH RELATING TO CHILDREN

Bulletin 37

Prepared by

Dorothy O'Connell
Lori Falkenberg Hoshizaki
Julianne Lee Charlton

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NOTES: *Research Relating to Children* is prepared by the ERIC Clearinghouse on Early Childhood Education under the direction of Lilian G. Katz, Ph.D. Investigators who wish to submit abstracts of their research projects should address correspondence to:

Research Relating to Children
ERIC Clearinghouse on Early Childhood Education
University of Illinois
805 West Pennsylvania Avenue
Urbana, Illinois 61801

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PREFACE

Research Relating to Children, Bulletin 37 includes reports of research in progress or recently completed research. With the exception of the section on Long-Term Research, it does not repeat studies included in *Bulletins 3* through *36*, even though they are still in progress. This issue, therefore, does not reflect all research relating to children, but only research reported to us from March 1976 through August 1976.

In addition to reports of current research, *Bulletin 37* contains *Child Abuse and Neglect: A Bibliography*, which updates previous ERIC Clearinghouse on Early Childhood Education bibliographies on the subject. The bibliographic sources include ERIC documents, journal articles, books, and pamphlets that we hope you will find useful.

Publication references and plans are cited in the abstracts of research in the bulletin. The Clearinghouse, however, does not maintain information on the publications of the investigators. If you wish to obtain further details about any of the projects, please check professional journals in the appropriate field, or write directly to the investigator.

We wish to thank investigators who have submitted reports of their research and those who have informed us of other studies. We wish to acknowledge the valuable assistance of the Social Research Group, George Washington University, and the foundations that provided us with information about their research grants.

Lilian G. Katz, Ph.D.
Director
ERIC Clearinghouse on Early Childhood Education

To Research Investigators:

This publication is only as complete as you are willing to make it. On page 187 you will find a form for reporting your current research. On page 191 you will find a form to let us know of other investigators who are working in the field. Please let us hear from you.

Research Relating to Children
ERIC/ECE
805 West Pennsylvania Avenue
Urbana, Illinois 61801

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CHILD ABUSE AND NEGLECT: A BIBLIOGRAPHY

This selective bibliography on child abuse and neglect is divided into three sections: (1) ERIC Documents, Books, and Pamphlets on Child Abuse, (2) Journal Articles on Child Abuse, and (3) Additional Sources on Child Abuse.

Citations of ERIC documents (denoted by ED numbers) appeared in *Research in Education, (RIE),* and citations of journal articles appeared in *Current Index to Journals in Education (CIJE)* from May 1975 through August 1976. Books and journals are available in public libraries. ERIC documents may be ordered from:

Computer Microfilm International Corporation
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ERIC studies may be ordered on microfiche (MF) or on hard copy (HC). To read MF (a transparent film card), use a microfiche reader available in most libraries. HC is a photocopy of the original document.

Major descriptors (marked with asterisks) and minor descriptors appear under each citation. Descriptors with asterisks denote the document's major subject matter; terms without asterisks suggest topics of lesser import that are covered in the document.

ERIC Documents, Books, and Pamphlets on Child Abuse

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Children's Hospital Medical Center, Boston, Massachusetts. Draft report of Phase I of the Family Development Study. September 1974, 153 pp. ED 103 563.

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*Behavior Patterns, *Child Abuse, Child Welfare, Clinical Diagnosis, *Counseling Services, *Identification, Parent Counseling, *Psychological Patterns, Stress Variables

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Van Stolk, Mary. Who owns the child? *Childhood Education*, March 1974, 50(5), 259-265.

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Weinbach, Robert W. Case management of child abuse. *Social Work*, September 1975, 20(5), 396-402.

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Additional Sources on Child Abuse

The May-June 1975 issue of *Children Today*, a bimonthly publication of the Children's Bureau, Office of Child Development, U. S. Department of Health, Education, and Welfare, is devoted exclusively to child abuse and neglect. (Citations are included in the bibliography.)

Voice for Children, January 1974, contains five pages related to recognizing cases of child abuse. Available from: Day Care and Child Development Council of America, Inc., 1201 - 14th Street, N.W., Washington, D. C. 20005.

The Fall 1973 issue of the *Journal of Clinical Child Psychology* is devoted to the problems of child abuse. Reprints are available from: Gertrude J. Williams, Editor, State 208, Meramec Bldg., 111 South Meramec Avenue, St. Louis, Missouri 63105.

The National Child Protection Newsletter on child protection is available free from: National Center for the Prevention and Treatment of Child Abuse and Neglect, 1205 Oneida Street, Denver, Colorado 80220.

The National Directory of Child Abuse Services and Information, which lists 135 public and private child abuse treatment and prevention agencies ($4.00), and *Caring*, a newsletter on child abuse (free) are available from: National Committee for the Prevention of Child Abuse, Dept. 1, Suite 510, 111 East Wacker Drive, Chicago, Illinois 60601.

"Child Abuse," a bibliography of indexed medical literature on child abuse (no price indicated) is available from: Literature Search Program, Reference Section, Reference Services Division, National Library of Medicine, 8600 Rockville Pike, Bethesda, Maryland 20014.

"Publications on Child Protection," a free list of 50 publications related to child abuse, is available from: Children's Division, The American Humane Association, P. O. Box 1266, Denver, Colorado 80201.

LONG-TERM RESEARCH

Note: The reports in this section concern research programs that are continuous.

37-AA-1 LONGITUDINAL STUDY OF CHILD GROWTH AND DEVELOPMENT

Investigator(s): Frank Falkner, M.D., F.R.C.P., Director; Alexander F. Roche, M.D., Ph.D., Chief, Section on Physical Growth and Genetics; and Robert McCall, Ph.D., Chief, Section on Perceptual Cognitive Development, Fels Research Institute for the Study of Human Development, 800 Livermore Street, Yellow Springs, Ohio 45387.
Purpose: To conduct a multidisciplinary study of children whose health, growth, psychological development, and environment have been studied since birth, with prenatal and genetic information; and to determine normative patterns of growth and development in human subjects.
Subjects: Over 800 subjects: from present infants to adults with their children in study. The subjects are healthy, from rural and urban areas, and from upper-lower to middle class backgrounds.
Methods: A multidisciplinary longitudinal study is being conducted with regular visits and use of appropriate analyses and computer methodology.
Duration: 1930-continuing.
Cooperating group(s): (1) Public Health Service, U.S. Department of Health, Education, and Welfare. (2) National Science Foundation. (3) Samuel S. Fels Fund. (4) U.S. Air Force.
Publications: Information is available from the investigator on approximately 1,022 publications that have been completed to date.

37-AA-2 DEVELOPMENT OF BUDGETS FOR CLOTHING AND HOUSEHOLD TEXTILES

Investigator(s): Virginia Britton, Ph.D., Home Economist, Consumer and Food Economics Institute, Agricultural Research Service, U. S. Department of Agriculture, Federal Center Building No. 1, Hyattsville, Maryland 20782.
Purpose: To develop and update current household clothing budgets taking into account known physiological and sociopsychological needs, clothing habits, income and other resources of various population groups, and the prices and availability of clothing items.
Subjects: 12,000 children in 6,000 families with husband and wife and one to five children, but with no other persons living in the home.
Methods: Data were gathered from the 1960-61 Survey of Consumer Expenditures by the Bureau of Labor Statistics and the U. S. Department of Agriculture. Budgets for children were computed using regression methods for three economic levels of the USDA food plans — economy, low cost, and moderate cost. Separate clothing budgets were computed for boys and girls categorized by age, region, and urbanization. Budgets will be published as total expenditures for children's clothing (updated to current price levels) and in garment equivalent units.

Findings: Budget costs for boys tended to equal comparable budget for girls at the economy level. However, at higher budget levels, boys' costs were substantially less than girls' budgets. This was especially true for older children. Cost differences between clothing budget levels were substantially greater than between food plans, reflecting the greater elasticity of clothing expenditures. The majority of farm budgets and rural nonfarm budgets was about equal to the comparable urban budgets.
Duration: 1962-continuing.
Publications: Britton, V. Clothing budgets for children from the USDA: Annual costs at three levels in four regions. *Home Economics Research Journal*, March 1973, 1(3), 173-184. (Reprints are available from Sales Office, American Home Economics Association, 2010 Massachusetts Avenue, N.W., Washington, D. C. 20036. Price, $1.00.)

37-AA-3 CHILD HEALTH AND DEVELOPMENT STUDIES

Investigator(s): Jacob Yerushalmy, Ph.D., Professor of Biostatistics, School of Public Health, University of California, Berkeley, California 94720; Stephen Thomas, M.D., Director, Department of Obstetrics and Gynecology; and Edgar Schoen, M.D., Director, Department of Pediatrics, Kaiser Foundation Hospital, Oakland, California 94611.
Purpose: To investigate the relationship of parents' biologic, genetic, and environmental influences (including events during pregnancy, labor, and delivery) to the normal and abnormal development of offspring.
Subjects: Members of the Kaiser Foundation Health Plan (a prepaid medical care program) who reside in the San Francisco-East Bay area.
Methods: Expected byproducts of the investigation are the relationships of factors studied to (1) wasted pregnancies in the form of early fetal death, perinatal mortality, infant and child mortality; and (2) estimates of the incidence of different types of abnormalities. The study is a prospective, longitudinal type involving both mother and child. Gravidas in the Department of Obstetrics and children in the Pediatric Department are observed, interviewed, and given laboratory examinations. Physicians' observations are systematized uniformly. Special efforts are made to obtain information on members of the study who do not return to the plan for medical care. Detailed growth curves for children, ages birth to 6, and estimates of illnesses and injuries in infancy and the preschool child will be derived on a longitudinal basis.
Duration: July 1959-continuing.
Cooperating group(s): (1) Permanente Medical Group. (2) Kaiser Foundation Research Institute.
Publications: (1) *Journal of Pediatrics*, August 1967, 71(2), 164-172. (2) *Pediatrics*, 1967, 39, 940-941. (3) *American Journal of Obstetrics and Gynecology*, February 1964, 88(4), 505-518.

37-AA-4 THE BERKELEY, CALIFORNIA GROWTH STUDY

Investigator(s): Dorothy H. Eichorn, Ph.D., Research Psychologist, Institute of Human Development, University of California, Berkeley, California 94720.
Purpose: To study the mental and physical growth of normally healthy persons from birth to the present.
Subjects: 60 full-term, healthy newborns, born in Berkeley hospitals from 1928 to 1929 of white, English-speaking parents; and 140 offspring of these subjects, ages birth to 20, seen irregularly.

Methods: The same data, appropriate for age, were collected for the subjects and their offspring. Beginning in the first week of life, tests of mental and motor development, pediatric examinations, and interviews were conducted at frequent intervals during growth. At all visits, inquiries were made concerning current health and recent illnesses. Anthropometrics, body photographs, and skeletal X-rays were taken at most ages. Socioeconomic data were collected. Studies of the physical aspects of growth include analyses that compare health histories with physical growth and with skeletal maturation. Emotional and other personality variables are being studied for consistency, and in various interrelations with maternal behavior in infancy, birth histories, socioeconomic status, and intellectual and physical growth.
Duration: 1928-continuing.
Publications: (1) *American Psychologist*, 1968, 23(1), 1-17. (2) *Monograph of the Society for Research in Child Development*, 1963, 28. (3) Bayer, Leona and Bayley, Nancy. *Growth diagnosis: Selected methods for interpreting and predicting physical development from one year to maturity*. Chicago: University of Chicago Press, 1959.

37-AA-5 GROWTH OF PSYCHOPHYSIOLOGICAL PATTERNS IN INFANCY

Investigator(s): Wagner H. Bridger, M.D., Associate Professor of Psychiatry; and Beverly Birns, Ph.D., Assistant Professor of Psychology, Albert Einstein College of Medicine, Yeshiva University, Bronx, New York 10461.
Purpose: To investigate the origins and course of development of individual differences in neonates.
Subjects: Normal, healthy, full-term babies, 2 to 5 days old, born at Bronx Municipal Hospital Center.
Methods: A neonatal behavioral profile, which was established in previous studies, will be used. The profile includes behavioral and heart rate ratings on excitation, soothing, feeding, sleep, and nonstimulus periods of observation. Neonates will be followed at ages 2 weeks, and 1, 2, 3, and 4 months to measure the stability of early appearing traits and their relation to later behaviors. Data will be analyzed with respect to stability of early appearing behaviors and the relationship between neonatal behavior and maternal and birth history.
Duration: 1966-continuing.
Cooperating group(s): National Institute of Mental Health, Public Health Service, U. S. Department of Health, Education, and Welfare.
Publications: (1) Grant Newton and Seymour Levine (Eds.), *Early experience and behavior: Psychobiology of development*. Springfield, Illinois: Charles C. Thomas, 1968. (2) *Psychosomatic Medicine*, 1966, 28, 316.

37-AA-6 LONGITUDINAL STUDY OF DENTOFACIAL SKELETAL, PHYSICAL GROWTH, AND NUTRITION OF CHILDREN

Investigator(s): Bhim S. Savara, D.M.D., M.S., Chairman, Child Study Clinic, School of Dentistry, Health Sciences Center, University of Oregon, Portland, Oregon 97201.
Purpose: To study the dentofacial growth of children, assessment of skeletal age related to facial growth, and variations in physique and its effect on dentofacial growth; and to determine heritable traits.

Subjects: 420 children, including 40 pairs of twins, ages 3 to 20. 300 children have been observed for more than 15 years.

Methods: Cephalograms, hand, wrist, and calf X-rays, intraoral X-rays, study casts, anthropometric measurements, and photographs are taken; and oral examinations are administered to the subjects. Children are examined every 6 months until they are 14 years old.

Findings: See publication references listed below.

Duration: 1950-continuing.

Cooperating group(s): (1) University of Oregon Health Sciences Center, School of Dentistry. (2) National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

Publications: *Angle Orthodontist*, 1968, 38, 104-120; *American Journal of Orthodontics*, 1969, 55, 133-153; *American Journal of Physical Anthropology*, 1969, 30(2), 315-318; *Bulletin of the Academy of General Dentistry*, June 1969, 27-31; *Journal of Dentistry for Children*, November-December 1969, 1-4; *American Journal of Orthodontics*, 1970, 57(6), 561-572; *Journal of Dental Research*, 1970, 49(4), 885; *Advances in Oral Biology*, New York: Academic Press, Inc., 1970. Pp. 1-9; *Journal of the American Dental Association*, 1970, 81, 653-661; *Oral Health*, 1971, 61(10), 19-28; *American Journal of Orthodontics*, 1971, 59(5), 488-500; *Symposium on Close-Range Photogrammetry*. Urbana: University of Illinois, 1971. Pp. 365-369; *Angle Orthodontist*, 1972, 42(1), 35-43; *American Journal of Orthodontics*, 1972, 61(3), 231-245; *American Journal of Orthodontics*, 1972, 61(4), 345-352; *Cleft Palate Journal*, 1972, 9(2), 119-131; *American Journal of Orthodontics*, 1972, 61(6), 603-618; *Angle Orthodontist*, 1973, 43(2), 207-215; *American Journal of Orthodontics*, 1973, 63(6), 610-621; *American Journal of Physical Anthropology*, 1973, 39, 49-56; *American Journal of Orthodontics*, 1973, 64(3), 248-257; *American Journal of Orthodontics*, 1974, 66(5), 479-486; *Human Biology*, 1974, 46(4), 693-698.

37-AA-7 NEW RADIOGRAPHIC STANDARDS OF REFERENCE FOR SKELETAL DEVELOPMENT OF CHILDREN AND STANDARDS IN PREPARATION

Investigator(s): S. Idell Pyle, Ph.D., Research Associate in Anatomy, School of Medicine, Case Western Reserve University, Cleveland, Ohio 44106; William W. Greulich, Ph.D., Research Biologist, National Institute of Child Health and Human Development, Bethesda, Maryland 20014; and staff of the National Center for Health Statistics involved in the National Health Survey, Public Health Service, U. S. Department of Health, Education, and Welfare, Washington, D. C. 20201.

Purpose: To develop radiographic standards of reference for skeletal development of children to provide a basis for identifying maturity levels of growing bones in the hands, elbows, shoulders, hips, knees, and feet of children and youths according to the shapes of the bone shadows in an X-ray film.

Subjects: Approximately 1,000 healthy individuals in Cleveland and Boston.

Methods: The bone shadows in an X-ray film display a modal rate of growth of each bone by illustrating regularly occurring osseous features which develop in series in the surface of the bone cortex as it calcifies. A reference standard consists of films arranged as a series to show sequential osseous features which are alike in males and females. It is an instrument for measuring the skeletal maturity level of children. Films of the subjects, covering the full span of growth from birth to adulthood, have been used to prepare standards. A standard of reference for joints in the upper extremity is in preparation, with the section on the hand and wrist showing the application of cardinal maturity indicators of individual bones to handwrist bones which are anomalous in the number of their bone growth centers. For published standards, see publication references listed below.

Cooperating group(s): Bolton-Brush Growth Study Center, Case Western Reserve University, Cleveland; Department of Maternal and Child Health, Harvard University School of Public Health, Boston; National Center for Health Statistics, Rockville, Maryland; Departments of Pediatrics and Endocrinology, Henry Ford Hospital, Detroit; Merrill-Palmer Institute, Detroit; Department of Education, Eastern Michigan University, Ypsilanti.

Publications: (1) Greulich, W. W. and Pyle, S. I. *A radiographic atlas of skeletal development of the hand and wrist* (2nd ed.) Stanford, California: Stanford University Press, 1959. (2) Hoerr, N. L.; Pyle, S. I.; and Francis, C. C. *A radiographic atlas of skeletal development of the foot and ankle* (1st ed.) Springfield, Illinois: Charles C. Thomas, 1962. (3) Pyle, S.I. and Hoerr, N. L. *A standard of reference for the growing knee.* (2nd ed.) Springfield, Illinois: Charles C. Thomas, 1969. (4) Pyle, S. I.; Waterhouse, A.M.; and Greulich, W. W. *A standard of reference for the growing hand and wrist.* (1st ed.) Cleveland: The Press of Case Western Reserve University, 1971.

37-AA-8 METHODS IN CHARACTER DEVELOPMENT

Investigator(s): Ernest M. Ligon, Ph.D., Director; and staff, Union College Character Research Project, 10 Nott Terrace, Schenectady, New York 12308.

Purpose: To develop more effective methods in character development in cooperation with families and character training agencies. (Character is defined in terms of three dimensions: philosophy of values, breadth of social vision, and strength of purpose.)

Subjects: Children and families throughout the United States. The families belong to churches, YMCAs, and schools but participate in the study as individual families.

Methods: Procedures of the research are based on action research, in which the participants cooperate with the laboratory and use methods of coscientist research. Open-ended reports on research goals constitute the basic body of research data. An analysis of these data serves as the basis for the development of new procedures and for the scientific reports that are published concerning it.

Findings: Reports have been prepared concerning hypotheses tested in the home and character building agencies. Most of the findings relate to the home, learning, decision making, and methods for character development, plus descriptions of age level potentials, especially for decision making.

Duration: 1935-continuing.

Cooperating group(s): Lilly Endowment, Inc.

Publications: Catalog: *Attitude Education and Character Development,* which lists 44 publications and includes a price list, is available from the investigator.

37-AA-9 LONGITUDINAL GROWTH STUDIES OF CHILDREN WITH CRANIOFACIAL BIRTH DEFECTS

Investigator(s): Samuel Pruzansky, D.D.S., Director, Center for Craniofacial Anomalies, Medical Center, University of Illinois, P. O. Box 6998, Chicago, Illinois 60680.

Purpose: To study the epidemiology, genetics, morphology, physiology, and post-natal development; and to plot the natural history of children with craniofacial birth defects.

Subjects: Over 3,000 subjects, males and females, from infancy to adulthood.

Methods: The subjects were initially studied as infants. Procedures included roentgenocephalometry, tomography, dental casts, and photographs. Speech and hearing, psychosocial, and pediatric evaluations supplied additional information.
Findings: Patterns of growth have been delineated that are useful in clinical management. Some conditions have been shown to get worse; some show spontaneous improvement; and others remain unchanged. Syndrome-specific cranial morphologies have been described and genetic significance has been described.
Cooperating group(s): (1) Illinois State Pediatric Institute. (2) Division of Services for Crippled Children, University of Illinois. (3) Cook County Children's Hospital. (4) Division of Research, Maternal and Child Health Services, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare. (5) National Institute of Dental Research, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.
Publications: *Cleft Palate Journal*, 1971, 8, 239. A list of articles in journals of dentistry, medicine, public health, speech and hearing, and psychology is available from the investigator.

37-AA-10 NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)

Investigator(s): J. Stanley Ahmann, Ph.D., Project Director; Roy Forbes, Ed.D., Project Director; and George Johnson, Ph.D., Associate Project Director, National Assessment of Educational Progress, 700 Lincoln Tower, 1860 Lincoln Street, Denver, Colorado 80203.
Purpose: To obtain census-like data on the knowledge, skills, concepts, understandings, and attitudes possessed by young Americans; and to measure the growth or decline in educational attainments that occur over time in the 10 learning areas assessed.
Subjects: 27,000 subjects annually in each age group: 9, 13, and 17 (including high school dropouts and early graduates); and 5,000 young adults annually, ages 26 to 35.
Methods: The National Assessment of Educational Progress is an annual national survey that assesses 10 learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies, and writing. Three areas have been assessed twice: science (1969-70 and 1972-73); writing (1969-70 and 1973-74); and reading (1970-71 and 1974-75). The four age levels assessed were selected to correspond to the end of primary, intermediate, secondary, and postsecondary education. A national probability sample of approximately 2,500 to 2,600 individuals per group administered package, and 2,100 to 2,200 individuals per individually administered package are assessed annually. The samples are designed to allow NAEP to estimate the performance of the population for that age level. Students in school are assessed in small groups up to 12, or in some cases, in individual interviews. Paper and pencil questions, discussions, and actual tasks to perform are included among the exercises. Adults are interviewed individually at home, and 17-year olds who are out of school also respond to exercises individually. Results are reported for about 50 percent of the exercises given each year and are stated in percentages of people responding correctly or incorrectly. Results are reported nationally and for geographic region, size and type of community, age, sex, race, and parental education.
Duration: 1969-continuing.
Cooperating group(s): (1) National Center for Educational Statistics, U. S. Office of Education, Education Division, U. S. Department of Health, Education, and Welfare. (2) Carnegie Corporation. (3) Ford Foundation's Fund for the Advancement of Education. (4) Research Triangle Institute. (5) Measurement Research Center. (6) Education Commission of the States.
Publications: The National Assessment Publications List is available from Education Commission of the States, 300 Lincoln Tower, 1860 Lincoln Street, Denver, Colorado 80203.

37-AA-11 COLLABORATIVE STUDIES IN CEREBRAL PALSY AND OTHER NEUROLOGICAL AND SENSORY DISORDERS OF INFANCY AND CHILDHOOD

Investigator(s): Joseph S. Drage, M.D., National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare, Bethesda, Maryland 20014.

Purpose: The Collaborative Perinatal Project (CPP) is a longitudinal multidisciplinary research effort which seeks leads to the etiologies of cerebral palsy, mental retardation, learning disorders, congenital malformations, minimal brain dysfunction, convulsive disorders, and communicative disorders through studies which relate the events, conditions, and abnormalities of pregnancy, labor, and delivery to the neurological and mental development of the children of these pregnancies.

Subjects: During a period from 1959 through 1966, detailed research data were obtained from 50,000 women during pregnancy, labor, and delivery. The children born to these 50,000 women during their participation in the CPP have been examined at specific intervals up to the child's eighth birthday to identify abnormal conditions which might limit the child's ability to reach maximum developmental potential.

Methods: A comprehensive analysis of the data will investigate the complex interactions between the child's condition and the antecedent factors which may have contributed to the condition. The analysis of this data is underway within the National Institutes of Health, within other government agencies, and under contract with teams of investigators at medical centers outside of government. The Perinatal Research Branch and the National Institute of Neurological and Communicative Disorders and Stroke have the responsibility for monitoring, coordinating, and administering the overall research effort. The goal of this effort is to make a series of publications available to the research community and the general public. The projected completion of this analysis is June 30, 1976. The data for the CPP were collected at 12 major medical centers in the United States.

Duration: 1956-continuing.

Cooperating group(s): Charity Hospital, New Orleans, Louisiana; Johns Hopkins University School of Medicine, Baltimore, Maryland; Boston Lying-In Hospital, Children's Medical Center, and Harvard University (Warren Anatomical Museum), Boston, Massachusetts; University of Minnesota Medical School, Minneapolis, Minnesota; Columbia-Presbyterian Medical Center, New York, New York; Children's Hospital of Buffalo, Buffalo, New York; University of Oregon Medical School, Portland, Oregon; Children's Hospital of Philadelphia and Pennsylvania Hospital, Philadelphia, Pennsylvania; Brown University, Providence, Rhode Island; University of Tennessee Medical School, Memphis, Tennessee; Medical College of Virginia, Richmond, Virginia.

Publications: (1) Niswander, K. R. *et al. The women and their pregnancies, 1972.* (The Collaborative Perinatal Study of the National Institute of Neurological and Communicative Disorders and Stroke). Available from: Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Order Stock No. 1749-00038; price, $10.00. (2) A bibliography is available from the investigator.

37-AA-12 STUDY OF PERSONALITY ORIENTED DEVELOPMENT BY THE TWIN INTRAPAIR COMPARISON METHOD

Investigator(s): William Pollin, M.D., Chief; Donald Cohen, M.D., Clinical Associate; and Eleanor Dibble, Research Social Worker, Section on Twin and Sibling Studies, Adult Psychiatry Branch, National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare, Bethesda, Maryland 20014.

Purpose: To understand the contributions of genetic, constitutional, and environmental factors to social, emotional, and cognitive development during the first years of life; specifically, to explicate the factors that underlie the emergence of individuality, using twins and triplets as subjects.
Subjects: Twins and triplets, from the prenatal period through elementary school age.
Methods: The central methodological principle emphasizes the effort to define precisely developmental difference within infant and childhood MZ twin pairs, and then search for the determinants of such differences. In the longitudinal study, parents are interviewed as soon as the diagnosis of a twin pregnancy is made. Neurological, pediatric, and developmental assessments are performed at birth and at 3- to 6-month intervals during the first years of life. The parents are interviewed at the same intervals about the children's development and family history. In the preschool period, the children receive standardized psychological testing, are observed in a standardized nursery school setting, and are administered projective psychological testing. Children and families are visited at home and also seen in structured office settings. In cross-sectional studies, children are seen for developmental evaluation, psychological assessment, and observations of free play, and their parents are interviewed. The value of questionnaire techniques is being investigated. A general research question relates to the way in which constitutional differences in the children elicit different types of parenting, and the ways in which differential parental behavior shapes the emergence of personality differences in children.
Duration: 1967-1980.

37-AA-13 PREVENTIVELY ORIENTED SCHOOL MENTAL HEALTH PROGRAMS

Investigator(s): Emory L. Cowen, Ph.D., Professor, Department of Psychology, and Director, Primary Mental Health Project; D. A. Dorr, Ph.D., Research Coordinator; L. D. Izzo, M.A., Chief Psychologist; and M. A. Trost, M.A., Chief Social Worker, Primary Mental Health Project, University of Rochester, River Campus Station, Rochester, New York 14627.
Purpose: To detect and prevent school maladaptation.
Subjects: 7,500 school children including 4,500 primary children in 11 preventively oriented school mental health programs.
Methods: Current research, which originated in 1958 (see *Research Relating to Children, Bulletin 19,* January-September 1965, Study 19-SS-7, p. 214), includes 23 studies on training nonprofessionals, evaluation of programs, process analyses, selection-process relations, selection-outcome relations, and process-outcome relations. Between 20 and 30 different research instruments and assessment procedures are being used.
Duration: 1958-continuing.

37-AA-14 LANGUAGE ACQUISITION IN THE CONTEXT OF THE DEVELOPMENT OF BEHAVIOR AND INTERACTION

Investigator(s): Margaret Bullowa, M.D., Researcher, Speech Communication Group, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139.
Purpose: To find the steps by which early stages of the child's language development take place.

Subjects: Four firstborn children from white, English-speaking, middle class families.
Methods: Each child was observed from birth for at least 30 months at home at weekly intervals. On each visit a half hour continuous record was made on tape and film. An observer using a shielded microphone dictated a simultaneous description of ongoing behavior and interaction to supplement the film taken by a robot camera. A timing signal was placed on the tape and film every 5 seconds. (The tape and film from an observation may be synchronized during playback in the laboratory.) In addition, an independent team that consisted of a pediatrician and a developmental psychologist visited each baby's home once a month to assess other aspects of maturation and development. Indexes to sound and transcripts were made from the tapes to permit rapid search. Tapes are analyzed by linguists interested in phonological, semantic and syntactic features. Synchronized tape and film is studied by linguists and by the principal investigator, who is interested in the communicative behavior of which the vocalization forms a part.
Findings: The most significant finding is the apparent obligatory relationship between the child's vocal sound production and actions with the same meaning in early *performative sentences.* Such sentences are used by the child to communicate messages when he is showing something to someone, when he is greeting someone, etc. Another finding is the spontaneous appearance of sentences with topic-comment construction in the child's speech even though parents rarely use this construction. (The construction is not characteristic of adult American English.)
Duration: Pilot study, 1959-1965; present study, 1965-continuing.
Cooperating group(s): National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.
Publications: (1) *Journal of Child Psychiatry,* 1964, III(1), 53. (2) *Monographs of the Society for Research in Child Development,* 1964, 29(1), 101-114. (3) *Language and Speech,* 1964, 7(2), 107-111. (4) *Quarterly Progress Report of the Research Laboratory of Electronics,* 1966, 81, 181-186. (5) *Lingua,* 1967, 19(1), 1-59. (6) *Foundations of Language,* 1967, 1, 37-65. (7) Reibel, D. A. and Schane, S. A. (Eds.) *Modern studies in English.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969. Pp. 422-447. (8) Bar-Adon, A. and Leopold, W. F. (Eds.) *Child language: A book of readings.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971. (9) *Journal of the American Academy of Child Psychiatry,* 1971, 10(1), 124-135. (10) *Quarterly Progress Report of the Research Laboratory of Electronics,* M.I.T., 1971, No. 100. (11) Bullowa, M. From communication to language. Presented at the International Symposium on First Language Acquisition, Florence, Italy, 1972 (mimeo). (12) Bullowa, M. and Putney, E. A method for analyzing communicative behavior between infant and adult from film. Presented at a meeting of International Society for the Study of Behavioral Development, Ann Arbor, Michigan, 1973 (mimeo). (13) Bullowa, M. Non-verbal communication in infancy. Presented at 1st Congress of the International Association for Semiotic Studies, Milan, 1974 (preprint). (14) Gruber, J. S. Correlations between the syntactic constructions of the child and of the adult. In C. A. Ferguson and D. Slobin (Eds.), *Studies of child language.* Holt,, Rinehart and Winston, 1973. Pp. 440-445. (15) Bullowa, M. When infant and adult communicate how do they synchronize their behaviors? In A. Kendon *et al.* (Eds.), *Organization of behavior in face-to-face interaction.* Mouton, 1975. Pp. 97-129. (16) Bullowa, M. *et al. Infant vocalization: Communication before speech.* In T. R. Williams *(Ed.), Socialization and communication in primary groups.* Mouton, 1975. Pp. 253-281. (17) Bullowa, M. A matrix for language. Presented at the 21st Annual Conference of the International Linguistic Association, New York City, March 1976 (mimeo). (18) Bullowa, M. From communication to language. *International Journal of Psycholinguistics,* (in press). (19) Bullowa, M. Infants as conversational partners. In T. F. Myers (Ed.), *The development of discourse and conversation.* Edinburgh University Press (in press). (20) Bullowa, M. From performative act to performative utterance. In S. K. Ghosh (Ed.), *Biology, language and human behavior.* University Park Press (in press).

37-AA-15 THE HARVARD PRESCHOOL PROJECT

Investigator(s): Burton L. White, Ph.D., Director; Jean Watts, Ph.D., Co-director; and Barbara Kaban, M.A., The Harvard Preschool Project, Laboratory of Human Development, Graduate School of Education, Harvard University, 418 Larsen Hall, Appian Way, Cambridge, Massachusetts 02138.

Purpose: To trace the development of educability and competence in children during the first 6 years of life, and simultaneously to trace the role of experience in such development.

Subjects: Presently, 32 normal children, ages 12 to 32 months, of both sexes, half of whom were selected because they exhibited potentials to develop high degrees of general competence during the second and third years of life; while the other children seemed likely to develop a considerably lower level of competence.

Methods: The work in progress constitutes a longitudinal natural experiment. Data are collected by home observation and testing of the children on the average of 2 hours per week. One observational technique consists of tape recordings in which the observer describes the child's activities. The data are then coded onto forms using instruments developed for the project. Another technique involves a checklist record of behavior. Tests of language and cognitive development are administered regularly. Factors, including stream of experience, the child's competencies, and salient environmental influences, are measured.

Findings: Analysis of preliminary data indicates that the observation instruments are monitoring the development of competence in promising ways. Further indications of how childrearing practices influence the process are becoming clear. The mother or substitute, usually through indirect action, is seen as the major environmental influence on the development of competence. A longitudinal experiment has been initiated. (Also see *Research Relating to Children, Bulletin 22,* May-December 1967, Study 22-DA-3, p. 16.)

Duration: September 1965-continuing.

Cooperating group(s): (1) U. S. Office of Economic Opportunity. (2) Carnegie Corporation, New York. (3) Head Start, Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.

37-AA-16 LEARNING OF INCENTIVE VALUE IN CHILDREN

Investigator(s): Jum C. Nunnally, Ph.D., Professor, Department of Psychology, Vanderbilt University, Nashville, Tennessee 37203.

Purpose: To study the learning of incentive value in children through the use of reward conditioning.

Subjects: Elementary school children, ages 7 to 11.

Methods: Neutral objects (usually nonsense syllables) are associated with receipt of reward, nonreward, and loss of reward in various types of research designs. The amounts and kinds of condition reward value are measured in relation to verbal evaluation, reward expectancy, choice behavior, and measures of selective attention.

Findings: Various consistent effects have been found on the dependent measures, and the research paradigms have been able to differentiate many treatment conditions concerned with secondary rewards.

Duration: 1963-continuing.

Cooperating group(s): Office of Education, U. S. Department of Health, Education, and Welfare.

Publications: (1) Rileigh, K. K. and Nunnally, J. C. A new measure of semantic appraisal for studies of secondary rewards. *Psychonomic Science*, 1970, 18, 203-205. (2) Wilson, W. H. and Nunnally, J. C. A naturalistic investigation of acquired meaning in children. *Psychonomic Science*, 1971, 23, 149-150.

37-AA-17 CHILDHOOD PSYCHOSIS

Investigator(s): Rudolf Ekstein, Ph.D., Director, Childhood Psychosis Project; Seymour W. Friedman, M.D., Director, Clinical Services; Peter Landres, M.D., Staff Psychiatrist; Beatrice M. Cooper, M.A., Senior Research Social Worker; and Joel Liebowitz, Ph.D., Clinical Research Psychologist, Reiss-Davis Study Center, 9760 West Pico Boulevard, Los Angeles, California 90035.

Purpose: To develop better diagnostic and treatment methods for childhood psychosis; and to investigate psychoanalytic methods of treatment, the use of support systems, and work with parents, collaborating agencies, schools, and hospitals.

Subjects: 10 children, ages 5 to 20.

Methods: Data were gathered through tape recordings of psychotherapy sessions, therapists' summaries of sessions, and repeated psychological tests. The use of *distance* as a psychological mechanism will be investigated. (See *Research Relating to Children, Bulletin 18*, March-December 1964, Study 18-L-36, p. 58; and *Bulletin 20*, October 1965-May 1966, Study 20-IA-1, p. 72.)

Duration: 1957-continuing.

Publications: (1) *Children of time and space, of action and impulse*. New York: Appleton-Century-Crofts, 1966. (2) *The challenge: Despair and hope in the conquest of inner space*. New York: Brunner/Mazel, 1971. (3) Ekstein, R. and Friedman, S. W. Do you have faith that I'll make it? *Reiss-Davis Clinic Bulletin*, 1971, 8(2). (4) Rubin, K. The flawed hammer. *Reiss-Davis Clinic Bulletin*, 1971, 8(2). (5) Cooper, B. The flawed triangle. *Reiss-Davis Clinic Bulletin*, 1971, 8(2). (6) Liebowitz, J. M. Transformation of the flaw — Re-evaluation via psychological testing. *Reiss-Davis Clinic Bulletin*, 1971, 8(2). (7) Ekstein, R. and Wax, D. Fusion and diffusion of memory and perception in childhood psychosis in relation to psychotherapeutic innovations. *Reiss-Davis Clinic Bulletin*, 1972, 9(2). (8) Ekstein, R.; Friedman, S.; and Caruth, E. The psychoanalytic treatment of childhood schizophrenia. In B. B. Wolman (Ed.), *Manual of child psychopathology*. New York: McGraw Hill, 1972. Pp. 1035-1057.

37-AA-18 A SURVEY OF THE NUTRITIONAL STATUS OF BRITISH SCHOOL CHILDREN

Investigator(s): Judith Cook, M.B., B.Chem., Lecturer; Douglas Altman, B.Sc., Lecturer; W. W. Holland, M.D., F.F.C.M., Professor; and S. G. Topp, B.Sc., Dip.Stat., Lecturer, Department of Clinical Epidemiology and Social Medicine, School of Medicine, St. Thomas's Hospital, London, S.E. 1, England; and A. Elliott, M.D., D.P.H., County Medical Officer, Kent County Council, Kent, England.

Purpose: To examine the dietary intake of school children and investigate its relationship to health and socioeconomic factors; and to explore the extent and nature of poor nutrition.

Subjects: 1,017 children, born between 1953 and 1955 or between 1958 and 1960, residing in and attending Local Authority schools in four areas in Kent, England. The sample was stratified by social class, family size, and weight. Higher sampling fractions were taken for children from four groups: children (1) from larger families, (2) from

lower social classes, (3) with no fathers, and (4) with low weights; in order to have adequate numbers of subjects in those groups suspected of having the greatest likelihood of deficiency.

Methods: Field work for each child, conducted between September 1968 and March 1970, was comprised of a weighted diet record, a socioeconomic questionnaire, and a medical examination. The weighted diet record was kept for 1 week and was closely supervised by a trained field worker. The same field worker administered the socioeconomic questionnaire which elicited information on family structure, father's occupation, mother's education and working status, the child's health history and eating pattern, and the parents' heights. The medical examination, carried out by one of two medical officers, included a clinical assessment of the nutritional status of the child; measurements of height, weight, triceps and subscapular skinfold thickness, arm circumference, and peak expiratory flow rate. The medical examination also noted clinical evidence of vitamin deficiency.

Duration: 1968-continuing.

Cooperating group(s): Department of Health and Social Security.

Publications: (1) Cook, J. *et al.* A survey of the nutritional status of school children. Relation between nutrient intake and socioeconomic factors. *British Journal of Preventive Social Medicine*, 1973, 27, 91-99. (2) Topp, S. G.; Cook, J.; and Elliot, A. Measurement of nutritional intake among school children. *British Journal of Preventive Social Medicine*, 1972, 26, 106.

37-AA-19 RESEARCH AND GUIDANCE LABORATORY SUPERIOR STUDENT PROJECT

Investigator(s): Marshall P. Sanborn, Ph.D., Director; and Charles Pulvino, Ph.D., Associate Director, Research and Guidance Laboratory, University of Wisconsin, 1025 West Johnson, Madison, Wisconsin 53706.

Purpose: To develop and demonstrate procedures for the identification and description of multipotential and promising youth; to study the guidance and educational development of human potential; and to serve as a demonstration and development center for counseling, guidance, and planning activities for all cooperating high schools.

Subjects: This is a longitudinal sample now numbering 3,700 males and females, ages 14 to 30, from 90 Wisconsin school systems, whose average mental test scores are in the upper three to five percent of students in their age range and grade in school. Subjects are selected using criteria designed to identify multipotential youth in grade 9. These criteria include aspects of the student's vocabulary, spoken and written communication, reading background, range of interests, school performance, creativity, and learning behavior.

Methods: Subjects visit the laboratory facilities for 1 day at least once during their period of high school attendance. Arranged activities include testing and evaluation, analysis of written and oral performances, visits to classes and laboratories, and conferences with university staff members in any area of interest. These activities are designed to (1) broaden students' horizons with respect to educational and vocational opportunities, (2) develop realistic self-concepts about their own strengths and interests, (3) foster plans for suitable educational programs, (4) discover methods for overcoming limitations, (5) encourage development of personal and academic strengths, and (6) provide counsel on matters that may influence the individual student's fullest development. Findings are interpreted and implications are considered with the student in individual counseling sessions. Laboratory staff teams (1) visit students' schools and hold conferences with the parents of each participating child to inform parents about characteristics

of their children which they may not know; (2) stimulate action of parents to meet their child's developmental needs; (3) facilitate communication between the parents, school, and student; and (4) discover points of view and other parental characteristics which affect the student's development. A written report regarding each individual student is sent to his or her school containing information about the student's performance, interests, and needs, as well as suggestions the school could implement to provide desired educational or personal experiences. Inservice training sessions are held to discuss specific students, suggestions to the school, and general principles for guidance and education for superior students. Objectives of these training sessions are (1) stimulation of and assistance with the processes of identification of superior students; (2) encouragement and assistance in making special provision for the development of superior students, and stimulation to do so for other students; (3) provision of information about educational and vocational requirements and opportunities particularly applicable to superior students; (4) encouragement of innovation and experimentation in school procedures for superior students as well as for other students; and (5) demonstration of appropriate guidance services for high school students. Although there are difficulties in obtaining adequate control groups, some research studies have been done comparing laboratory participants with other students matched on academic, familial, school, and community variables. In addition, comparisons of the effectiveness of two or more procedures for accomplishing a particular guidance goal have been made in other laboratory research studies.

Findings: The Research and Guidance Laboratory is a cooperative effort which has maintained direct, personal, longitudinal, and functional relationships between the University of Wisconsin and 3,700 top students, their parents, and their teachers throughout Wisconsin. (See *Research Relating to Children, Bulletin 22,* May-December 1967, Study 22-QA-1, p. 83.) More than 97 percent of all student participants who have graduated from high school have enrolled in higher education programs. Many have gone on to graduate and professional study. As a group, these young people have established a very outstanding record in college.

Duration: 1957-continuing.

Cooperating group(s): (1) Office of Education, Education Division, U. S. Department of Health, Education, and Welfare. (2) 90 cooperating school systems in Wisconsin.

Publications: (1) Sanborn, P. and Niemiec, C. J. Identifying values of superior high school students. *School Counselor,* March 1971. (2) Bradley, R. W. and Sanborn, M. P. Ordinal position of high school students identified by their teachers as superior. *Journal of Educational Psychology,* 1969, 60(1), 41-45. (3) Mowsesian, R.; Heath, R.G.; and Rothney, J. W. M. Superior students' occupational preferences and their fathers' occupations. *Personnel and Guidance Journal,* November 1966. (4) Refer to *Education Index* for other publications related to this project.

GROWTH AND DEVELOPMENT

General

37-BA-1 THE EFFECT OF INFANT STRESS ON CHILD DEVELOPMENT

Investigator(s): John W. M. Whiting, Ph.D., Professor, Department of Anthropology, William James Hall 420, Harvard University, Cambridge, Massachusetts 02138; and Thomas K. Landauer, Ph.D., Research Fellow, Bell Laboratories, 600 Mountain Avenue, Murray Hill, New Jersey 07974.
Purpose: To determine the effect of the age at which a child is vaccinated on the rate of his physical and mental growth.
Subjects: Approximately 1,000 children, ages 3 to 9, in a Kikuyu village in Kenya.
Methods: This was an experimental study in which subjects were randomly assigned to groups differing by age of vaccination. The height, weight, and head circumference were taken of all subjects born between 1964 and 1973 during the summers of 1968, 1970, and 1973. A battery of cognitive tests was given to the children who were over 5 years of age in 1973. Detailed background and demographic data were also taken.
Findings: Tentative support has been found for the hypothesis that infant stress (in the form of vaccinations) enhances physical and cognitive development.
Duration: 1968-1976.
Cooperating group(s): Child Development Research Unit, University of Nairobi, Nairobi, Kenya.

37-BA-2 A LONGITUDINAL STUDY OF CHILD DEVELOPMENT

Investigator(s): S. N. Wolkind, M.D., M.R.C.Psych., Senior Lecturer; and F. Hall, Ph.D., Research Fellow, The London Hospital Medical College, Turner Street, London E.1, England.
Purpose: To study longitudinally the development of children.
Subjects: 220 British born primiparous women from an inner city area in London. Three samples will be studied: a randomly selected group, an unmarried group, and a group with a high prevalence of factors which would be expected to lead to difficulties in mothering.
Methods: All the mothers are seen in late pregnancy and at intervals following child-birth. Standardized interviews are given which cover factors including mother's mental state, marital relationship, child care, kin contacts, and the baby's temperamental characteristics. Eighty of the families will be seen more intensively. The babies will be tested when they are 7 days old with the Brazelton Neonatal Developmental Test, and ethiological observations will be carried out shortly after the interview in the home. Fathers will be interviewed when the baby is 14 months old.
Duration: January 1974-December 1979.

37-BA-3 NATIONAL CHILD DEVELOPMENT STUDY

Investigator(s): National Children's Bureau, 8 Wakley Street, Islington, London, England ECIV 7QE. Address correspondence to: Gillian Pugh, Senior Information Officer, National Children's Bureau.

Purpose: To investigate the effects of factors in the prenatal period and during labor that might have a bearing upon the early death or abnormality of the baby; and to carry out follow-up studies on these children at ages 7, 11, and 16.

Subjects: The initial sample was comprised of 17,518 births: all babies born in England, Scotland, and Wales during the week of March 3 to 9, 1958. The second sample, for the first follow-up in 1964, was comprised of 14,848 children (92 percent of those in the perinatal study) and an additional 646 children with no perinatal information. The third sample for the second follow-up (1969) was comprised of 15,389 children who had been traced from the second follow-up study.

Methods: For each of the births, a questionnaire was completed by the midwife in attendance at delivery, with reference to all available records and after an interview with the mother. The topics covered included social and family background, details of past obstetrics history, antenatal care and abnormalities during pregnancy, length and abnormalities of labor, analgesia and anesthesia, and the sex, weight, progress, management, and outcome of the infant. In the case of stillbirth and neonatal death, this information was supplemented with a clinical summary by the midwife and medical attendants. In the follow-up, the target sample was widened to include all children alive in England, Scotland, and Wales and born in the week of March 3-9, 1958. The information gathered on the children in the first follow-up study was gathered from the schools, a parental interview, and a medical exam. For each child, the schools completed an Educational Assessment Schedule, which asked for information about the school and its organization, the relationship between the school and the parents, and the teachers' assessment of the child's abilities, attainments, and behavior. Teachers completed a Bristol Social Adjustment Guide to provide a picture of the child's behavior in the school setting. The children completed the Southgate Reading Test, a copying designs test, Goodenough Draw-A-Man Test, and a problem arithmetic test. Mothers were interviewed at home by health visitors, during the course of which schedules were completed providing information on the size of the family; the parental situation; the father's occupation and education; the mother's work; the type of accommodation, tenure and number of rooms; household facilities; separations from the mother; preschool experiences, periods in care; attendance at infant welfare clinics; hospital admissions; clinic attendance; and other details of medical history, reports of behavior, physical coordination, and adjustment to school. Local authority doctors supervised a medical examination, which included measurements of height, weight, and head circumference; tests and clinical assessments of motor coordination and laterality, and a full clinical examination. In the second follow-up (when children were age 11), information was collected from the same sources as at age 7. Tests included a reading comprehension test and a mathematics test constructed for the study, a general ability test which had been developed for the study, and a copying designs test. Additionally, each child completed a short, pupil questionnaire which sought information about his interests in and out of school and his educational aspirations. Finally, the student wrote about what he thought his life would be like at age 25. The medical examination included the provision of ratings of pubertal development. The parental interview covered much the same areas as at age 7 with additional questions about the mother's employment, her satisfaction with neighborhood play amenities and her housing, and any financial hardship suffered by the family. During the third follow-up (1974) when the children were 16, local authority doctors carried out medical examinations on each child, every parent was interviewed, an educational questionnaire was completed by the school, and individual questionnaires and tests of mathematics and reading were completed by each child.

Duration: 1958-1977.
Cooperating group(s): (1) National Birthday Trust Fund. (2) Department of Health and Social Security. (3) Department of Education and Science. (4) Social Science Research Council.
Publications: (1) Davie, R.; Butler, N.; and Goldstein, H. *From birth to seven.* Longman, 1972. (2) Pringle, M. L. K.; Butler, N. R.; and Davie, R. *11,000 seven-year-olds.* Longman, 1966.

37-BA-4 DEVELOPMENTAL RECORDS PROJECT

Investigator(s): National Children's Bureau, 8 Wakley Street, Islington, London, England ECIV 7QE. Address correspondence to: Gillian Pugh, Senior Information Officer, National Children's Bureau.
Purpose: To develop a comprehensive record keeping system for children between birth and early adolescence; and to construct, where possible, an observational framework for recording development.
Methods: A developmental guide is being constructed that will provide an observational framework, and will also provide (1) an objective means through a system of carefully guided observations for indicating in functional terms how children are developing; (2) indication of progress over a period of months or years; (3) insight into developmental delay and to reveal areas of special need; (4) information that will form a basis for planning and executing measures to meet the need of individual children both within the unit and/or by referral to outside agencies; and (5) a long-term record of development. These developmental records may be used by those in a caring or teaching role, but who do not necessarily have any special qualifications in the field of child development. The guide is not intended to be used as a test; no quantitative measures will be obtained from it. It has been derived using criterion-referenced principles, the criteria being stages of development obtained from existing knowledge on child development. The first stage of the development guide covers the years from birth to 5 and is organized in five sections: physical development, adaptive development, communication, self-help, and behavior. In each section the basic stages of development are set out in short simple statements that serve as a checklist. A pilot version has been tried out with 200 London children by nursery school workers, teachers, and mothers, and a limited number of a revised experimental version is now available to researchers. Work is currently in progress on a Development Guide for the 5 to 9 age range. This guide includes sections on general information, social and emotional behavior, movement and physical skills, intellectual skills, and language development.
Duration: 1972-1977.

Physical

37-CA-1 NEUROVESTIBULAR INVESTIGATION OF INFANTS AND CHILDREN

Investigator(s): Lydia Eviatar, M.D., Pediatric Neurologist, Bronx Lebanon Hospital Center, 1650 Grand Concourse, Bronx, New York 10457.
Purpose: To evaluate the development of vestibular function and orienting mechanisms in infants and children; and to evaluate problems of dizziness, vertigo, and incoordination

Subjects: 200 infants followed longitudinally from birth to 5 years.
Methods: This is a cross-sectional study of problems related to vestibular dysfunction (e.g., vertigo imbalance). Fifty normal, full-term, adequate for gestational age babies will be compared to high risk, premature, small for gestational age or large for gestational age babies whose vestibular function may be delayed. The control infants will also be compared to babies born with neurological complications. Data will be collected on periodical neurological and developmental evaluations and electronystagmographic recording of vestibular responses to rotation, caloric stimulation, and optokinetic.
Findings: There is delayed appearance of vestibular responses in prematures and small for gestational age babies. Premature infants catch up developmentally much later than small for gestational age infants, and ENG (electronystagmography) responses are delayed. Speech delay is seen in many.
Duration: May 1972-May 1978.
Cooperating group(s): Albert Einstein College of Medicine.
Publications: (1) Eviatar, L.; Eviatar, A.; and Naray, I. Maturation of vestibular responses in infants. *Developmental Medicine and Child Neurology*, November 1972, 16(4), 435-446. (2) Eviatar, L. Vertigo in childhood. Comments on pathogenesis and management. Based on experiences with 24 such cases. *Clinical Pediatrics*, 1974, 13(11), 940-941.

37-CA-2 A PROSPECTIVE STUDY OF SEXUAL DEVELOPMENT AND GROWTH IN AMERICAN GIRLS

Investigator(s): Leona Zacharias, Ph.D., Associate Biologist in Surgery, Vincent Memorial Hospital, Fruit Street, Boston, Massachusetts 02114.
Purpose: To study adolescent growth and the onset of reproductive capability, by analyzing and interpreting longitudinal data on growth (from ages 5 to 19), and the development of menstrual regularity as a possible indicator of fertility.
Subjects: Approximately 800 girls attending the public schools of Newton, Massachusetts were studied prospectively from age 5 or 6 through age 18 or 19.
Methods: Height and weight measurements were taken on the girls every 6 months between the ages of 5 and 8, and every month between the ages of 8 and 19. Detailed records were kept of the data and character (related to duration, amount of flow, presence of discomfort, pain, and other menstrual phenomena) of each girl's first 20 periods. The growth measurements will be statistically treated by nonlinear least-squares regression techniques, and growth data of each girl will be fitted to several mathematical models (modified sigmoid, exponential, etc.). Menstrual data will be analyzed by standard stochastic process methods. This longitudinal data should allow for characterization of physical and sexual development of adolescent American girls in the 1960s and 1970s.
Findings: There is extreme variability of growth data at specified ages and especially in relation to age at menarche. No secular trend in growth during at least the last 35 years could be found. The most important observation so far is that, although it is widely held that the adolescent growth spurt is an invariant phenomenon of human growth, no adolescent spurt can be detected for a significant and substantial number of the girls in the population, in spite of the use of sophisticated analytical techniques.
Duration: 1965-1978.
Cooperating group(s): Massachusetts Institute of Technology, Department of Nutrition and Food Science.
Publications: Zacharias, L; Rand, W. M.; and Wurtman, R. J. A prospective study of sexual development and growth in American girls: The statistics of menarche. *Obstetrical and Gynecological Survey*, 1976, 31(4), 325-337.

37-CB-1 SOMATOTYPE, PHENOTYPE, STEREOTYPE, AND BEHAVIOR

Investigator(s): Richard N. Walker, Director of Research, Gesell Institute of Child Development, 310 Prospect Street, New Haven, Connecticut 06511.

Purpose: To determine more about the locus of associations between preschoolers' physique and behavior by relating early behavior ratings to four methods of evaluating physique, the associations having different susceptibility to stereotypic or organismic determination.

Subjects: A core of 47 boys and 30 girls, evaluated as preschoolers and followed in growth to mid-adolescence; and a supplementary sample of 117 boys and 101 girls, evaluated as preschoolers only.

Methods: Physique photographs were made of 295 nursery school children whose behavior was rated by their teachers on 12 multi-item scales. Physical growth of 77 of these subjects was followed to mid-adolescence. The four methods of evaluating the subjects' physiques were (1) evaluation of what the children most obviously looked like as preschoolers, in fatness, mascularity, and thinness as judged by nursery school teachers; (2) evaluation of preschool photographs by experts judging phenotypic expression of endomorphy, mesomorphy, and ectomorphy; (3) somatotype evaluations made by Sheldon for the whole growth series of each core sample subject, emphasizing near mature status; and (4) somatotype forecasts made from preschool data via statistical prediction of the variables used to determine somatotype (mature height, somatotyping ponderal index, trunk index). High physique-behavior correlations for the first method, relative to the others, would indicate strong influence of stereotyping; low correlations would indicate that the teachers were not using physique cues in judging behavior. Relatively high correlations for the third and fourth methods would emphasize organismic associations and negate stereotyping, since these measures show little similarity to early appearance as judged by teachers. Relatively high correlations for the second method would be most consistent with a mixture of sources of association. Correlations among the four physique evaluation methods for the core sample (and 61 supplementary longitudinal subjects lacking early behavioral data) will be compared and a factor analysis run. Relative contribution of each physique approach to prediction of the behavior variables, individually and collectively, will be determined by multiple regression analysis and canonical correlation.

Duration: September 1958-June 1976.

Cooperating group(s): National Institute of Mental Health; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

Publications: (1) Walker, R. N. Body build and behavior in young children: I. Body build and nursery school teachers' ratings. *Monographs of the Society for Research in Child Development*, 1962, 27(3). (2) Walker, R. N. Body build and behavior in young children: II. Body build and parents' ratings. *Child Development*, 1963, 34, 1-23.

37-CB-2 PHYSICAL FITNESS APPRAISAL OF CALGARY SCHOOL CHILDREN

Investigator(s): Donald G. Watts, M.A., Instructor, Department of Leisure Education and Physical Education, Mount Royal College, 4825 Richard Road, S.W., Calgary, Alberta, Canada T3E 6K6; and George Kinnear, Ph.D., Faculty of Physical Education, University of Calgary, Calgary, Alberta, Canada.

Purpose: To evaluate the current physical fitness level of Calgary public school children on selected physical fitness parameters.

Subjects: 913 boys and 737 girls, ages 5 to 19, selected randomly from grades 1 to 12 in the Calgary Public School System.

Methods: Subjects were tested by six university students who travelled from school to school during the months of May and June 1975. Schools were tested in the following order: 15 high schools, 10 junior high schools, and 10 elementary schools. The tests administered were PWC 170, predicted MUO_2 scores, height, weight, grip strength, body fat, sit-ups, sit-and-reach flexibility, stand-and-reach flexibility, and chest raise. Body fat measurements taken on the students included subscapular, tricep, suprailiac, and umbilical.

Findings: On the PWC 170/kg, Calgary students were above the national median at all grades. After grade 10, the PWC 170/kg had a sharp decline from a median of 15.21 to 13.59, and there was a sharp increase from a median of 9.44 for grade 1 to a median of 13.8 for grade 3. The females increased from a median of 5.59 to 11.67 between grades 1 to 4. The females decreased sharply after grade 9 from a median of 11.13 to a median of 9.40 in grade 11, and then increased sharply to 11.52 in grade 12.

Duration: May 1975-May 1976.

Cooperating group(s): (1) Department of Physical Education, University of Calgary. (2) Department of Advanced Education, STEP Program, Government of Alberta, Edmonton, Alberta, Canada.

Publications: Copies of the study are available from the Department of Physical Education, Calgary School Board, Calgary, Alberta, Canada.

37-CB-3 ENERGY INTAKE AND EXPENDITURE OF OBESE CHILDREN AND ADOLESCENTS

Investigator(s): Lillian G. Butler, Ph.D., Associate Professor, Department of Nutrition, University of Maryland, College Park, Maryland 20742.

Purpose: To compare energy intake and expenditure of obese and normal weight control subjects.

Subjects: 30 obese and 30 control children, ages 9 to 16, matched for age, sex, race, and socioeconomic status.

Methods: Data were collected through 3-day records of the dietary intake and time activities records which were recorded by the interview technique. Data are being evaluated by the matched Fischer t-test.

Findings: Energy intakes of obese and matched controls do not differ, nor does the time spent in various activities; i.e., sleep, television watching, moderate physical activity, and very active sports. Measurements of actual energy expenditures are planned in the future, since intakes do not seem to differ.

Duration: 1974-1978.

Cooperating group(s): U. S. Department of Agriculture.

37-CB-4 PRESCHOOL OBESITY AND LEANNESS

Investigator(s): Ruth L. Huenemann, D.Sc., Professor of Public Health Nutrition, School of Public Health, 423 Warren Hall, University of California, Berkeley, California 94720.

Purpose: To identify the chief environmental factors associated with the development of obesity and, if encountered, extreme leanness; and to determine the ages of onset in preschool children.

Subjects: All infants born in 1 year in Berkeley, California classified as Japanese and Negro; and a random sample of 200 Caucasians selected from birth certificates on file at the Berkeley City Health Department. At 6 months of age, 456 subjects were in the

study, and at the successive ages of 1, 2, 3, 4, and 6, the sample diminished annually to 186 children, age 6.

Methods: Anthropometric measurements (skinfold thickness, body circumferences, height, and weight), activity records, dietary records, and data on the mother's beliefs and opinions in regard to child feeding and activity were obtained when subjects were 6 months, 1, 2, 3, 4, and 6 years old. The relations were determined through multivariate analyses.

Findings: Obesity indexes have been developed for successive ages. About 12 percent of the sample are obese at age 6. There is a trend among the obese 6-year olds to have been obese earlier in life, particularly between ages 1 and 2. Breast feeding did not protect the 6-year olds from obesity and neither did the time of introduction of solid foods into the baby's diet (whether 2 weeks or 16 weeks).

Duration: January 1970-December 1978.

Cooperating group(s): (1) Maternal and Child Health Service. (2) Agricultural Experiment Station. (3) Ross Laboratories. (4) Gerbers Baby Food. (5) Bureau of Community Health Services, Social and Rehabilitation Service, U. S. Department of Health, Education, and Welfare.

Publications: (1) Huenemann, Ruth L. Environmental factors associated with preschool obesity Parts I and II. *Journal of American Dietetic Association,* 1974, 64(5). (2) Crawford, Patricia B. *et al.* An obesity index for six-month-old children. *American Journal of Clinical Nutrition,* 1974, 27, 706-711.

37-CC-1 VISUAL ASYMMETRIES IN FOVEAL RECOGNITION

Investigator(s): M. Joseph Schaller, Ph.D., Assistant Professor, Department of Psychology, University of Wisconsin, Charter at Johnson Streets, Madison, Wisconsin 53706.

Purpose: To distinguish visual asymmetries in foveal recognition in prereading and reading children.

Subjects: 112 subjects: preschool, 1st-, 3rd-, and 7th-grade children; and adults.

Methods: In this investigation, students will match the orientation (vertical or horizontal) of a bar that appears randomly within one of 35 circles in a 5 X 7 array. The match will be made nonverbally by the subject touching one of two marked panels. Stimuli will be tachistoscopically presented at individually set times so the subject can achieve a performance that is correct at the 75 percent level. The children's results will be compared to the adults' results on the same test.

Findings: Preschool children showed no superiority on the left vs. right; third graders showed significant top and right superiorities; and two-thirds of the adults showed superiority on the left. Asymmetries in recognition still appear among children when reporting, and rehearsal factors are controlled, but they cannot be easily explained in terms of the reading development hypothesis of sequential processing. Other mechanisms are considered that may account for the superiorities.

Duration: 1975-1977.

Cooperating group(s): (1) National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare. (2) Wisconsin Alumni Research Foundation.

37-CC-2 CHROMATIC VISION IN INFANCY: OPERANT CONDITIONING

Investigator(s): M. Joseph Schaller, Ph.D., Assistant Professor, Department of Psychology, University of Wisconsin, Charter at Johnson Streets, Madison, Wisconsin 53706.
Purpose: To investigate color vision in infants.
Subjects: Eight male and female infants, ages 1.6 to 2.6 months.
Methods: This study tested the ability of an infant, in an operant eye movement paradigm, to abstract the chromatic dimension from a patterned stimulus as a whole. Social, visual, and auditory reinforcement were used to condition the infant to fixate longer on green members of green and white pairs, in a series of patterned stimuli that systematically varied and differed from each other in intensity. No attempt was made to match intensities, which ranged over relative values from 200 to 1. Thus, wavelength, and not changing intensity differences, provided the basis for successful discrimination. This research would provide the first successful demonstration of chromatic vision in infants that did not have an intensity confound.
Findings: A pilot study indicated that infants in the age range tested can make the intended discrimination and probably do possess chromatic vision. Green vs. white color discrimination is more difficult than green vs. red discrimination. Two of the subjects discriminated. One infant discriminated red vs. white.
Duration: November 1975-March 1976.
Cooperating group(s): (1) National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare. (2) Wisconsin Alumni Research Foundation.

37-CC-3 COORDINATION OF AUDITORY AND VISUAL ATTENTION IN THE FIRST YEAR OF LIFE

Investigator(s): Harry McGurk, Ph.D., Lecturer; and John MacDonald, M.Sc., Research Fellow, Department of Psychology, University of Surrey, Guilford, Surrey, England.
Purpose: To plot the development of coordination and integration between auditory and visual perception.
Subjects: 120 male and female infants, ages 0 to 12 months.
Methods: The research design follows a standard habituation-dishabituation paradigm involving simultaneous presentation of auditory and visual stimuli. Data are analyzed for habituation and recovery effects in both modalities.
Findings: Provisional analysis of data indicates that by 6 months of age infants are capable of simultaneous processing of auditory and visual information.
Duration: September 1973-November 1976.
Cooperating group(s): United Kingdom Social Science Research Council.
Publications: McGurk, H. Space perception in early infancy: Perception within a common auditory-visual space? *Science*, November 15, 1974, 186, 649-650.

37-CC-4 STIMULUS VARIABLES THAT AFFECT THE CONCORDANCE OF VISUAL AND MANIPULATIVE EXPLORATION IN 6-MONTH-OLD INFANTS

Investigator(s): David R. Pederson, Ph.D., Associate Professor; and Donna Steele, M.A., Department of Psychology, Social Science Centre, University of Western Ontario, London, Ontario, Canada N6A 5C2.

Purpose: To determine the conditions that may affect the lack of concordance between visual and manipulative exploration in 6-month-old infants.
Subjects: 40 female and 40 male home raised infants, ages 26 weeks.
Methods: Infants will look less at an object as it becomes familiar. Looking times recover with the presentation of a novel object. Recent evidence suggested that it is not until the infant is older than 8 months that this familiarization-novelty effect occurs for manipulative exploration. In Experiment 1, infants were familiarized to one object and then exposed to a second object that was different in color (visual change) or that was different in shape and texture (visual and tactile change). In Experiment 2, the novel object differed either in shape or in texture. Latency and duration measures of looking and touching were taken on each trial.
Findings: During familiarization, infants looked at and manipulated the object less, but response latencies did not change with repeated exposure. When the novel object presents new visual and tactile cues, both looking and manipulation duration increased in response to the novel object. The novel object in the visual change condition elicited an increase in looking but not manipulation duration.
Duration: February 1974-May 1976.
Cooperating group(s): Canada Council.
Publications: Research Bulletin #363 is available from the Department of Psychology, University of Western Ontario.

37-CC-5 THE DEVELOPMENT OF A PREFERENCE FOR MODIFIED LINEAR PERSPECTIVE

Investigator(s): Margaret A. Hagen, Ph.D., Assistant Professor, Department of Psychology, Boston University, 64 Cummington Street, Boston, Massachusetts 02215.
Purpose: To investigate when a preference for modified perspective in pictures develops.
Subjects: 15 male and female nursery school children, ages 3 to 5; and 15 male and female primary school children, ages 7 to 8.
Methods: The research involves presenting computer generated pictures of cubes and pentagonal solids in varying degrees of perspective convergence under various viewing conditions. The subjects are asked to choose which picture is best.
Findings: In a previous study by Hagen and Elliot, it was found that adults consistently preferred modified perspective. The nursery school children prefer true (conic) perspective.
Duration: March 1976-June 1976.
Cooperating group(s): (1) National Institute of Mental Health; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service, U. S. Department of Health, Education, and Welfare. (2) Boston University Graduate School Grant.

37-CC-6 AUDITORY AND DISCRIMINATION IN VERY YOUNG CHILDREN

Investigator(s): William A. Yost, Ph.D., Associate Professor; and W. Keith Berg, Ph.D., Assistant Professor, Department of Psychology, IASCP, AS3 #36, University of Florida, Gainesville, Florida 32111.
Purpose: To define normal and auditory sensitivity and discrimination.
Subjects: 100 normal children, ages 0 to 6.

Methods: Methods in this investigation involve taking the heart rate, brain stem auditory evoked potentials, forced choice adaptive psychophysics, and suppression of an acoustic startle with a prepulse. Subjects will serve as their own controls.
Duration: July 1975-July 1980.
Cooperating group(s): National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

37-CC-7 PERCEPTUAL FIELDS AND SPATIALLY DISPLACED COMPONENTS OF THE MULLER-LYER ILLUSION

Investigator(s): Gary S. Stern, Ph.D., Professor, Department of Psychology, University of Colorado, Denver, Colorado 80216; and Nefeli H. Carayannis, M.A., Assistant Psychologist; and Ernest G. Jackson, M.A., Staff Psychologist, Laradon Hall Centre for Exceptional Children, 51st and Lincoln, Denver, Colorado 80216.
Purpose: To test perceptual field in preschool children as compared to normal and retarded adults using the Muller-Lyer Illusion Figure.
Subjects: 12 preschool children, ages 4 to 6; 12 normal adults, ages 17 to 55; 12 mentally retarded adults who have mild perceptual problems and an IQ above 60; 12 mentally retarded adults who have severe perceptual problems and an IQ above 60; and 12 mentally retarded adults with an IQ below 60.
Methods: Two new features were incorporated into the design of this study: (1) each form of the Muller-Lyer was presented separately to the subject as opposed to the usual Brentano method of presentation which presents both forms together, and (2) each subject was asked to estimate a neutral horizontal line without the illusion components such as the fins, in order to determine the amount of discrepancy present between the actual objective length of a line and an individual's subjective perception of it. The purpose of these features was to reduce the risk of confounding extraneous variables. The fins of the Muller-Lyer illusion were progressively displaced from the shaft, in order to test perceptual fields of preschool children and normal and retarded adults. F-analysis was conducted on a repeated measures design of one variable between and two within. Mean estimates were computed for each subject, giving a total of 1,980 measures. A Cochran C-test was performed, t-tests were made, and a Greenhouse Geiser conservative F-test was used.
Findings: It was hypothesized that normal adults, having better perceptual integration skills, would maintain the illusion longer, despite spatial displacement of its parts, than either preschoolers or retarded adults. It was found that the Muller-Lyer illusion is not a sensitive tool for studying perceptual fields. However, a very interesting pattern of response emerged. As the distance of the fins from the shaft increased, overestimation decreased for the outgoing fin, and the ingoing fin form reversed to greater overestimation than the former. Such a phenomenon is not easily explained by present perceptual theories. It was also found that retarded adults and preschoolers showed more susceptibility to the classical Muller-Lyer illusion than normal adults.
Duration: April 1975-April 1976.
Publications: Results are available from the investigators.

37-CC-8 THE EFFECTS OF VARYING SIGNAL TO NOISE RATIO IN DICHOTIC SPEECH PERCEPTION TASKS ON CHILDREN

Investigator(s): Harriet L. Berlin, M.S., Research Associate; and John K. Cullen, Jr., Ph.D., Assistant Professor, Department of Otorhinolaryngology, Kresge Hearing Research Laboratory of the South, Louisiana State University Medical Center, Building 164, 1190 Florida Avenue, New Orleans, Louisiana 70119.

Purpose: To compare the information handling capacity of children to adults; and to answer the questions: (1) When the speech signal is degraded in one ear, does the performance of the other ear improve linearly? (2) Does the information from each ear combine additively? and (3) Is there a difference in performance between right and left ears?

Subjects: Four groups of eight children, ages 7, 9, 11, and 13; and one group of eight adults. Selection was based on criteria of normal hearing, scores on monaural discrimination of stimuli, no history of head trauma, right handedness, and native speakers of American English.

Methods: Thirty pairs of consonant-vowels were presented dichotically through a high quality audio system at each signal to noise ratio of +30, +18, +12, +6, and 0 dB. Earphones were reversed after this series and the procedure repeated. Four subjects in each group started with channel 1 to the right, and four with channel 1 to the left.

Findings: Preliminary findings reveal that information trading previously found in adult subjects also takes place in children. However, the amount of information handled increases as a function of age.

Duration: January 1976-June 1976.

Cooperating group(s): National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

37-CE-1 PATTERNS OF FOOD INTAKE AND NUTRITIONAL HEALTH OF GIRLS IN RURAL TENNESSEE

Investigator(s): Ozie L. Adams, Ph.D., Health and Nutrition Specialist, Agricultural Extension Service, Tennessee State University, P. O. Box 323, Nashville, Tennessee 37203.

Purpose: To correlate food choices with nutritional health of girls, ages 9 to 12; and to assess the impact of economic level and ethnic background on their food choices and nutritional health.

Subjects: 120 girls, ages 9±, 60 black and 60 white, representing three rural counties. Half of the subjects in each group were selected from low income families ($1,000 per capita or less per year), and half were from higher income families ($2,000 per capita or more per year).

Methods: Data being collected include anthropometric, demographic, dietary, biochemical, clinical, physical performance, and development information. Lifestyle — food patterns, nutritional knowledge, familial and demographic data will be collected by questionnaires. Biochemical and clinical data include collection of blood and urine samples for analyses, oral examination of teeth, and physical examinations.

Duration: July 1975-June 1977.

Cooperating group(s): Meharry Medical College, Department of Biochemistry.

37-CF-1 ORAL HEALTH FACTORS AND THE EFFECTS OF FLUORIDATED WATER AND FLUORIDE TABLETS ON DENTAL CARIES

Investigator(s): Elizabeth A. Fanning, B.D.S., D.D.S., F.R.A.C.D.S., F.I.C.D., Associate Professor, Department of Dentistry, University of Adelaide, Adelaide, South Australia 5001.
Purpose: To determine the effects of fluoridated drinking water on the primary dentition.
Subjects: 10,000 three- to five-year-old children attending city and rural kindergartens in South Australia.
Methods: Children have a dental examination twice yearly. Parents provide information on diet, dental home care, fluoride tablet intake, etc., and this information is related to dental caries experience of the children. The project was initiated in 1970 before fluoridation (March 1971) and will terminate in 1977, when all kindergarten children would have had prenatal and postnatal exposure to fluoridated drinking water.
Findings: Fifty-five percent of the children had never visited a dentist; sweet snacks between meals were common; and taking fluoride tablets was associated with better health practices. Sixty percent of the subjects had some exposure to fluoride tablets, but only 17 percent had optimal daily dose. Eighty-eight percent of the children had zero decay when fluoride tablets were taken daily, and 41 percent had zero scores when tablets were not taken.
Duration: 1970-1977.
Cooperating group(s): (1) Australian Dental Association, South Australia Branch, Inc. (2) Kindergarten Union of South Australia. (3) Colgate-Palmolive Pty-Ltd.
Publications: (1) *Australian Dental Journal*, 1975, 20, 39-42. (2) *Australian Dental Journal*, 1975, 20, 7-9. (3) *Australian Dental Journal*, 1974, 19, 35-38.

37-CF-2 A CEPHALOMETRIC ANALYSIS FOR CHILDREN IN THE PRIMARY DENTITION

Investigator(s): William F. Vann, Jr., D.D.S., M.S., Resident in Pedodontics, School of Dentistry, University of North Carolina, Chapel Hill, North Carolina 27514.
Purpose: To establish cephalometric norms for the preschool child who exhibits a clinically ideal Class I dental occlusion and an excellent facial profile; and to identify a population and compile the initial data that will serve as a baseline for a study in the growth and development of the orofacial complex of the child who exhibits an initial ideal Class I occlusion and an esthetically pleasing profile.
Subjects: 32 children, ages 4 to 5, who met the following criteria: (1) were North American Caucasians of Northern European ancestry; (2) had a symmetrical face and a straight to slightly convex soft tissue profile; (3) had a full complement of nonmobile primary teeth, and no evidence of eruption of any of the first permanent molars into the oral cavity; (4) exhibited no active caries clinically; (5) exhibited a Class I primary cuspid relationship and a Class I second primary molar relationship; (6) did not exhibit anterior maxillary or mandibular incisor crowding; (7) did not exhibit anterior or posterior crossbite; and (8) had an overjet in the range of 1.0 to 4.0 millimeters, and an overbite in the range of 1.0 to 3.5 millimeters.
Methods: Each participating child was given a prophylaxis prior to a thorough oral examination. Intraoral alginate impressions were taken and study models were fabricated utilizing white castone. An APF topical fluoride treatment was performed. Panorex and left lateral cephalometric radiographs were taken on each subject. The panorex radiographs were obtained with an S.S. white Panorex machine, and the radiographs were used as an adjunct to oral examination. Soft tissue enhancement was obtained using an aluminum wedge filter attached to the collimeter. Patients were positioned so that target

midsaggital head distance was standardized at 5 feet and film midsaggital head distance was standardized at 11 centimeters. Ear rods were stabilized in position on each subject relative to the central ray, so that ear rods were superimposed on each lateral cephalometric radiograph. A nasion rest was used to facilitate maintenance of a study head position for each subject. Profile and full face photographs were made for each participant. All photographs were taken with the use of a ceiling mounted head positioner and a Nikon 85 mm lens and camera which were fixed and standardized for film-target position. Head positioner and camera heights were fixed to insure complete standardization of all photographs. A vertically adjustable chair was used to position participants properly with respect to the fixed head positioner and the fixed camera. All lateral headplate radiographs were traced on orthodontic matte tracing paper. Each landmark for every tracing was identified by the investigator with the assistance of a collaborating orthodontist experienced in head and neck anatomy and cephalometric analysis. When these two investigators could not identify or agree on the location of a given landmark, additional expertise was sought, or a new film was taken for that patient. The cephalometric analysis was used for this investigation and included 12 anatomical landmarks, 15 planes, and 18 angular relationships.

Duration: September 1975-July 1976.

37-CG-1 THE DEVELOPMENT OF INHIBITORY CONTROL IN CHILDREN

Investigator(s): John A. Stern, Ph.D., Professor, Behavior Research Lab, Washington University, 1420 Grattan Street, St. Louis, Missouri 63104.

Purpose: To evaluate the *motor overflow* or *associated movement* phenomenon as a function of age; and to investigate this phenomenon's relationship to central nervous system functioning in the child.

Subjects: Approximately 160 healthy, normal boys and girls, ages 6 to 13. The children are black or white from low to middle class families. A group of approximately 40 subjects were the children of chemically dependent patients.

Methods: The design of this study is one of evaluating developmental trends. These studies are attempts to develop normative data for normal children. Data are being collected in the public school system. A good deal of new equipment was developed for both the measurement and evaluation of motor overflow. Electronic dynamometers and special reaction time equipment have been devised permitting direct tape recording of data which are then analyzed through newly developed programs for the PDP-11 computer that analyzes motor overflow and reaction time in real time.

Findings: Initial findings indicate that inhibitory control develops as a function of age in an essentially linear fashion. However, this development appears to be asymmetrical with greater inhibitory control for the right hand than the left in right-handed subjects. The sample of left-handed subjects is too small for evaluation of any asymmetrical development.

Duration: September 1973-continuing.

Cooperating group(s): (1) St. Louis Public School System. (2) Malcolm Bliss Mental Health Center.

Publications: (1) Stern, J. A. *et al.* Toward a more refined analysis of the "overflow" or "associated movement" phenomenon. In D. V. Siva Sankar (Ed.), *Mental health in children*, V. II (in press, 1975). (2) Heiman, M. L. The development of inhibitory controls: A study using dynamometer and reaction time tasks in 8, 10, and 12 year olds. (An honors thesis, Washington University, June 1975.)

37-CG-2 DEVELOPMENT OF SENSITIVITY TO INFORMATION FOR IMPENDING COLLISION

Investigator(s): Albert Yonas, Ph.D., Associate Professor, Institute of Child Development, University of Minnesota, Minneapolis, Minnesota 55455.
Purpose: To study the development of sensitivity to information for impending collision; and to test the hypothesis that postural changes of infants in response to an approaching object are of an orienting rather than a defensive nature.
Subjects: 100 infants in three age ranges: 25 one- to two-month-old infants (13 males and 12 females); 51 four- to six-month-old infants (26 males and 25 females); and 24 eight- to nine-month-old infants (eight males and 16 females). All subjects were Caucasian, home reared, and healthy.
Methods: Stimulus displays (collision, noncollision, and nonexpanding patterns) were presented to subjects by a shadow-caster, consisting of a concentrated arc lamp behind a rear projection screen. An opaque diamond shape served as the occluder. Behavioral responses, such as blinking, arm raising, head withdrawal, and head rotation were recorded on videotape. Heart rate was monitored by use of small bipotential electrodes. The unique feature of the experiments was the addition of a control condition in which a contour rose vertically on the screen without expansion.
Findings: Results indicate that avoidance of collision is absent in 1- to 2-month-old infants, begins to emerge in 4- to 6-month olds, and is present in an integrated manner in 8- to 9-month olds.
Duration: June 1973-May 1976.
Cooperating group(s): (1) National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare. (2) Center for Research in Human Learning, University of Minnesota. (3) National Science Foundation.
Publications: Preprints of the study are available from the investigator.

37-CG-3 HUMAN MOTOR DEVELOPMENT: BIRTH TO WALKING

Investigator(s): Anna M. Doudlah, Ph.D., Research Scientist, Central Wisconsin Colony and Training School, 317 Knutson Drive, Madison, Wisconsin 53704.
Purpose: To describe the sequence of motor events from birth to walking in normal human infants.
Subjects: 20 normal girls and boys were filmed monthly from 1 to 18 months.
Methods: Movie records were made of the spontaneous motor behavior of the children. Each child was filmed monthly in his home over an 18-month period. Only spontaneous behavior was filmed; children were never made to perform action patterns they were not capable of doing by themselves. After analyzing the films, motor behaviors were listed by child and by month and were compressed into A Motor Development Checklist.
Findings: The sequence is descriptive of the child's motor message and can be used as a framework within which motor development of normal and developmentally disabled children can be recorded and/or evaluated.
Duration: 1970-1976.
Publications: A Motor Development Checklist and an educational videotape depicting the motor development sequence in twin boys are available from: Library Information Center, Central Wisconsin Colony and Training School.

37-CG-4 A COMPARISON OF INDIAN AND CAUCASIAN CHILDREN'S PERFORMANCE ON THE PURDUE PERCEPTUAL MOTOR SURVEY

Investigator(s): Robert P. Gelhart, Ed.D., Professor, Department of Psychology, Division of Special Education, Pepperdine University, 4019 Westerly Place, Suite 105, Newport Beach, California 92660.
Purpose: To acquire initial information on whether children from different ethnic backgrounds in rural settings perform differently developmentally in gross and fine motor areas and visual motor integration.
Subjects: 40 Indian and 40 Caucasian children, ages 7 to 12, with an IQ range of 75 to 115.
Methods: The investigation involves a comparative design with both groups of children being tested using the Purdue Perceptual Motor Survey and the Beery Visual-Motor Integration Test. The children were matched according to chronological age, IQ, length of time in school, and selected data from the Illinois Test of Psycholinguistic Abilities, Wide Range Achievement Test, and the Wepman Auditory Discrimination Test. Data will be statistically treated with t-tests and correlations.
Findings: Comparatively, Indian children perform differentially on both research instruments, and there are indications that cultural factors exist that impede advanced motoric development.
Duration: 1975-1976.
Cooperating group(s): Nye County Public School District.

37-CH-1 PROGRAMMED STUTTERING THERAPY FOR CHILDREN

Investigator(s): Bruce P. Ryan, Ph.D., Research Associate; and Barbara Van Kirk, M.A., Research Assistant, Behavioral Sciences Institute, 72 Fern Canyon Road, Carmel, California 93921.
Purpose: To compare four different programs for producing fluent speech in children who stutter.
Subjects: 40 girls and boys, ages 7 to 17, all of whom stuttered.
Methods: During the first year of the research, the children were divided into four groups of four subjects per program. Pre-post testing of speech fluency included natural speech situations. Subjects, teachers, and parents were interviewed. The research was carried out in public schools. In the second year, the children were divided into two groups of 12 subjects each (eight in each of three school districts) and were assigned to one of two programs. Testing and interview procedures were similar to the first year.
Findings: All four programs work. Two programs were more efficient than the other two. Programmed therapy for children who stutter can be carried out effectively in public school settings.
Duration: September 1972-completed.
Cooperating group(s): (1) Monterey Peninsula School District. (2) Palo Alto, San Luis Obispo, and San Jose School Districts. (3) Bureau of Education for Handicapped, Office of Education, U. S. Department of Health, Education, and Welfare.
Publications: A limited number of copies of a Final Report is available from the Bureau of Education for Handicapped, Office of Education.

37-CH-2 SPEECH ACQUISITION BY A HEARING CHILD OF DEAF PARENTS

Investigator(s): Peyton Todd, Ph.D., Department of Psychology, University of Tennessee, 8 Ayers Hall, Knoxville, Tennessee 37916.
Purpose: To study the process of language acquisition in younger children.
Subjects: One male, normal hearing child of deaf mute parents, who did not hear any speech until age 3.
Methods: By examining this child's speech learning process, the effects of cognitive maturation can be separated from the acquisition of the linguistic system. An enormous and highly detailed record has been made of both the child's sign language and speech. This record consists of over 500 hours of audiotape and 100 hours of videotape and has been spread out at intervals over 3 years and 3 months. Much of it has been transcribed, specifically noting the context of his utterances. Structural descriptions of his utterances will be written on the basis of the contextual information and the investigated developmental process, tracing the respective influences of his cognitive maturity and his knowledge of sign language upon the course of his acquisition of speech. A confounding factor in the study is that before the child heard speech, he was already using the sign language of the deaf. But to the extent that his sign language influences his acquisition of speech, this provides an excellent opportunity to study the structure of sign language as it attempts to realize itself in the auditory mode.
Findings: The child translates literally from his native language into speech.
Duration: October 1969-continuing.
Cooperating group(s): (1) National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare. (2) Grant Foundation. (3) National Science Foundation.
Publications: Information is available from the investigator.

37-CH-3 EFFECT OF SPEAKER FAMILIARITY ON CHILDREN'S COMPREHENSION OF TIME-COMPRESSED SPEECH

Investigator(s): Ellen-Marie Silverman, Ph.D., Assistant Professor; and Andrea Thompson, B.S., Graduate Student, Department of Speech, Marquette University, Milwaukee, Wisconsin 53233.
Purpose: To determine whether elementary school children more readily comprehend the speech of a familiar speaker than the speech of someone unknown to them.
Subjects: 30 children, age 8, divided into two groups of 15 (eight boys and seven girls). The subjects, matched for chronological age and IQ, all have normal hearing.
Methods: A passage considered appropriate for 8-year olds was taperecorded by a speaker known to only one of the two groups. The recording was time-compressed by 45 percent and was presented to both groups, one subject at a time. The children's comprehension of the material was gauged by the percentage of correct responses to questions concerning content of the recording. The comprehension of the passage by the two groups will be compared by a t-test for unrelated measures.
Duration: August 1975-August 1976.

37-CH-4 ACQUISITION OF THE VOICE DISTINCTION IN ENGLISH, SPANISH, AND CANTONESE

Investigator(s): Charles A. Ferguson, Ph.D., Professor, Department of Linguistics; and Dorothy A. Huntington, Ph.D., Professor of Hearing and Speech Sciences, Stanford University, Stanford, California 94305.
Purpose: To study consonant development in children in relation to three major issues: models of phonology, language universals, and individual strategies.
Subjects: Two girls and two boys (four subjects per language) in each of three age groups: 6 to 8 months, 1.4 to 1.6 years, and 4.6 years. The 12 subjects in age Group 2 will be seen twice a month for a year. The 24 subjects in Groups 1 and 3 will each be seen once.
Methods: The investigation experiments are limited to English, Spanish, and Cantonese initial stops. The methods used will include observation of spontaneous production, word imitation, and word elicitation (i.e., through the use of toys and picture books). All tape recording will be done in a sound isolation booth. The data will be phonetically transcribed; all initial stops will be spectrographically analyzed. Particular attention will be given to voice onset time characteristics of the stops.
Duration: 1968-continuing.
Cooperating group(s): National Science Foundation.
Publications: (1) Ferguson, C. A. Learning to pronounce: The earliest stages of phonological development in the child. *Papers and Reports on Child Language Development*, 1976, 11, 1-27. (2) Paper presented at the Eighth Child Language Research Forum, Stanford University, April 1976: Farwell, C. B. Some ways to learn about fricatives. (3) Macken, M. A. Permitted complexity in phonological development: One child's acquisition of Spanish consonants. *Papers and Reports on Child Language Development*, 1976, 11, 28-60.

Intellectual

37-DA-1 IDENTIFYING PRESCHOOL CHILDREN AT RISK

Investigator(s): Helen Reinherz, Sc.D. Professor, Director of Research Sequence, School of Social Work, Simmons College, 51 Commonwealth Avenue, Boston, Massachusetts 02116.
Purpose: To determine the prevalence of social, emotional, and cognitive and or other developmental dysfunctioning among preschool children.
Subjects: 750 girls and boys, ages 4 to 5.
Methods: All children registering for kindergarten in 1976 in a large industrial town were screened for language and perceptual motor ability, vision, and hearing. Health histories from the prenatal period were secured, and parents furnished developmental data as well as behavioral assessments. Analysis will involve a search for at risk indices in each area and clustering of variables. Later validation studies will follow.
Duration: July 1975-November 1978.
Cooperating group(s): National Institute of Mental Health; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

37-DA-2 CHILDREN WITH MINIMAL BRAIN DYSFUNCTION, FRONTAL AND TEMPORAL LOBE TYPES

Investigator(s): Roscoe A. Dykman, Ph.D., Professor and Head, Division of Behavioral Sciences; and John E. Peters, M.D., Professor and Head, Division of Child-Adolescent Psychiatry, University of Arkansas Medical Center, 4301 West Markham, Little Rock, Arkansas 72201.

Purpose: To explore the possiblility that neurological dysfunctioning of the temporal lobes leads to difficulty in learning to read and spell, whereas dysfunctioning of the frontal lobes leads to problems with impulse control and sustained attention.

Subjects: Three groups (20 subjects each) of hyperactive, learning disabled, and normal achieving boys, ages 7½ to 10. All subjects are of normal intelligence, have normal cultural advantage, and are without uncorrected defects of vision or hearing.

Methods: This project, which follows an animal model developed by Karl Pribram, investigates social perception, temperament, and learning approaches in three distinct groups of elementary school boys: normal achievers, learning disabled but not hyperactive, and hyperactive but not learning disabled. The Wide Range Achievement Test, the Wechsler Intelligence Scale for Children, and the hyperkinesis index derived from Conner's rating scale are used in the selection of subjects. Standardized tests are administered to assess locus of control, introversion-extroversion, neuroticism, and defensiveness. Social and moral development are assessed with Piaget's intentionality stories, Flavel's role-taking task, and Selman's moral judgment interview. Learning behaviors (concept attainment, search strategies, task persistence) are studied in a self-paced visual search task via error and latency data. Brain functioning and autonomic responsivity during the search task are assessed from on-going EEG, heart rate, and skin resistance recordings.

Findings: Hyperactives scored higher on neuroticism, while learning disabled (LD) boys scored higher on defensiveness than normal achievers. More controls assessed intentions than did hyperactive and LD children; as many hyperactives were role-takers as normals, but relatively fewer LD children could take another's perspective. Locus of control scores and stage of moral development thus far have not clearly discriminated between groups. The clearest difference between groups has been in *effort* on the self-paced visual search task. Normal achievers have paced themselves at an average of 9.0 trials per minute, whereas LD boys average 8.0 trials; hyperactives, 7.5 trials.

Duration: April 1975-March 1977.

Cooperating group(s): National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare.

37-DB-1 THE INTERRELATIONSHIP OF CONSERVATION, READING READINESS, AND INTELLECTUAL MATURITY MEASURES IN FIRST GRADERS

Investigator(s): Victor Froese, Associate Professor, Faculty of Education, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2.

Purpose: To answer three specific questions: (1) Is there a significant relationship between the readiness tests (measures of learning) and conservation ability? (2) Is there a significant relationship between the Drawing Test scores (measures of development) and conservation ability? and (3) Is the Drawing Test/conservation relationship greater than the readiness test/conservation relationship?

Subjects: 57 children: 30 girls and 27 boys in three first grade classrooms in one metropolitan Winnipeg school.

Methods: This study focuses on the implications that Piagetian psychology has for initial reading instruction. Independent variables were measured by the Canadian Readiness Test and the Goodenough-Harris Drawing Test, while the dependent variable was the Concept Assessment Kit — Conservation. Correlational analyses were used.
Findings: The results indicated that Question 1 was confirmed but not Questions 2 and 3. Conservation ability is an important indicator of the subject's entry into the preoperational stage of development. Since the child probably needs to attain this level of development to profit from reading instruction, and since traditional intelligence measures do not correlate substantially with conservation, conservation measures as used in this study may be a promising indicator for the teacher to begin reading instruction.
Duration: January 1975-completed.
Cooperating group(s): University of Manitoba Research Board.
Publications: Reprints of the study are available from the investigator.

37-DB-2 A LIFE SPAN ANALYSIS OF RURAL CHILDREN'S MENTAL AND SOCIAL DEVELOPMENT

Investigator(s): Robert H. Poresky, Ph.D., Assistant Professor, Department of Family and Child Development, Kansas State University, Manhattan, Kansas 66506.
Purpose: To investigate the development of cognitive abilities and social competence in rural children; to describe family attitudes, demographic characteristics, and child caring patterns of rural families; to analyze the influence of family characteristics on the development of the children; and to provide information to extension personnel and other educators to assist them in developing programs and services.
Subjects: Over a 5-year period, 120 families with 40 three-year olds, 40 six-year olds, and 40 nine-year olds. Subjects will consist of 20 males and 20 females of each age group.
Methods: This is a 3-year longitudinal, cross-sectional, developmental study of rural Kansas children and their families. Data are to be collected by in-home maternal interviews, child assessments, and self-report questionnaires. The interview includes demographic characteristics and indices of satisfaction, community involvement, child care, and the quality of the home environment. The child assessment includes the Peabody Picture Vocabulary Test or Wechsler Intelligence Scale for Children-R subscales and Piagetian measures. Parental ratings are used for the child's social competence and parent behavior. A time-lag analysis may supplement the basic descriptive analysis.
Duration: July 1974-June 1979.
Cooperating group(s): (1) Kansas Agricultural Experiment Station (Regional Research Project). (2) The states of Illinois, Indiana, Iowa, Nebraska, and Wisconsin.
Publications: Professional journals and reports upon request from the investigator when available.

37-DB-3 CORRELATES OF MAKE-BELIEVE PLAY

Investigator(s): Anita K. F. Li, Ph.D., Assistant Professor, Department of Educational Psychology, University of Calgary, Calgary, Alberta, Canada T2N 1N4.
Purpose: To study certain cognitive and affective correlates of make-believe play; and to determine the effects of make-believe play training on creative functioning.
Subjects: 60 preschool children, ages 2½ to 6, both sexes, chosen from a subsidized day care center.

Methods: The research design involved two groups: an experimental group, which received make-believe training; and a control group, which was given opportunity for free play. Indices of make-believe play were obtained through observations. Instruments included Witkin's Preschool Embedded Figures Test, Kagan's Matching Familiar Figures Test, a self-concept scale, an alternate uses test, and an empathy scale. Improvement in creativity will be determined by the number of nonstandard responses on the alternate uses test.
Duration: October 1975-July 1976.
Cooperating group(s): University Research Grant, University of Calgary.

37-DB-4 EFFECTS OF CONTROLLED STIMULATION ON COGNITIVE DEVELOPMENT OF THE OFFSPRING OF MOTHERS UNDER AGE 16, AND ON MOTHER-CHILD BONDING

Investigator(s): Willis A. Wingert, M.D., Professor of Medicine, Los Angeles County-University of Southern California, Pediatric Pavilion, Room CD 1D 36A, 1129 North State Street, Los Angeles, California 90033; and Annabel Teberg, M.D., Associate Clinical Professor of Pediatrics, Los Angeles County-University of Southern California, Women's Hospital, Newborn Service, Room L919, 1240 North Mission Road, Los Angeles, California 90033.
Purpose: To study the effects of controlled stimulation on the cognitive development of children of mothers under age 16 and on mother-child bonding.
Subjects: Control and experimental samples of 20 full-term infants with uncomplicated neonatal course and normal pregnancy.
Methods: The experimental group is visited monthly by either a public health nurse or indigenous health aide who presents a standard program of infant stimulation for a period of 1 year. The control group receives usual well-baby-clinic care only. At 6 months and 1 year, development is determined by the Bailey method.
Duration: 1974-1977.

37-DC-1 FEATURE-POSITIVE AND FEATURE-NEGATIVE DISCRIMINATION IN YOUNG CHILDREN

Investigator(s): Joseph A. Parsons, Ph.D., Assistant Professor; and David Harrison, Student, Department of Psychology, University of New Mexico, Albuquerque, New Mexico 87106.
Purpose: To explore the feature-positive feature-negative phenomena in young children's successive discrimination learning (i.e., if the S+ has a distinctive feature, learning is improved over the case where the S- has the distinctive feature).
Subjects: 40 kindergarten children, both sexes, divided into two major groups.
Methods: The children were presented a successive discrimination task after a warm-up session in which token reinforcers were exchanged for a toy. Stimuli were on index cards and had either two common elements (XX) and one distinctive element (O) or were all common (XXX). Location of a response was recorded as well as the occurrence or nonoccurrence of a response. The data were subjected to analysis of variance for both successive and simultaneous (location) discrimination ratios.
Findings: While there was no difference in groups on the successive discrimination ratios, feature-positive subjects showed the effect by responding to the distinctive elements more often than the feature-negative subjects.
Duration: January 1976-July 1976.

37-DC-2 MODALITY EFFECTS IN SENSORY AND SHORT-TERM MEMORY IN CHILDREN

Investigator(s): Coralie Dietrich, Ph.D., Associate Professor, Department of Psychology, University of Wisconsin, Stevens Point, Wisconsin 54481.
Purpose: To determine modality effects on sensory and short-term memory in children at three developmental levels and two levels of reading achievement.
Subjects: 90 children: 30 in each of three groups: 6- to 7-year olds, 9- to 10-year olds, and 18- to 19-year olds. Half of each group will be normal readers; half will be 2 years below grade level in reading achievement.
Methods: The subjects will be presented with a sensory short-term memory task in two modalities (visual and auditory) in a counterbalanced order. A 3 (developmental level) X 2 (reading level) X 2 (memory systems) X 2 (modalities) mixed analysis of variance with repeated measures on the last two factors will be used to evaluate the results.
Duration: July 1976-July 1977.

37-DD-1 PEABODY PICTURE VOCABULARY TEST APPLIED TO JAPANESE CHILDREN

Investigator(s): Satoru Inomata, Lit.D., Professor, Department of Psychology, Shiga University, Otsu City, Japan.
Purpose: To determine if the Peabody Picture Vocabulary Test (PPVT), translated into Japanese, measures intelligence or adaptation function to modern educational institutions in Japanese children.
Subjects: 41 nursery, kindergarten, and elementary school children, ages 2½ to 7 years 5 months, in Shiga Prefecture, Japan.
Methods: The PPVT, Form B was administered by five research fellows to children individually. In each age group, test reliability was computed by the Kuder-Richardson formula, and within each age group, means and standard deviations were computed.
Findings: It was found that 8-year-old children resolved almost all 150 problems in the PPVT, and that the highest limit of the test, for computation scores, could not be determined. For the age groups 3, 4, 5, 6, and 7, test reliability was found to be 0.94, 0.96, 0.93, 0.91, and 0.92 respectively.
Duration: April 1974-March 1977.
Publications: Information is available from the investigator.

37-DD-2 A LONGITUDINAL STUDY OF INTELLIGENCE PATTERNS AND SOCIAL BACKGROUND

Investigator(s): Ingvar Johannesson, Professor, Project Leader; and Agneta Bergsten Brucefors, Research Associate, Institute of Education, University of Lund, Madlyckevägen 31, Mariestad, Sweden S-54200.
Purpose: To study the structure of the Terman Merrill Intelligence Test; and to relate intelligence factors to variables in the social background.
Subjects: 163 girls and boys studied longitudinally from ages 3 through 11.
Methods: The Terman Merrill Intelligence Test was administered to the children at ages 3, 5, 8, and 11. Averages were taken of the results at each age and analyzed by hierarchical cluster analyses. A discriminant analysis was carried out on the intelligence clusters and social background data.

Findings: Many social variables (such as parents' education and quality of dwelling) discriminated among intelligence clusters, while other variables (e.g., number of siblings and parent situation at home) did not.
Duration: 1966-completed.
Cooperating group(s): Kapolinska Sjukhuset.

37-DD-3 THE DEVELOPMENT OF NORMS FOR THE MATCHING FAMILIAR FIGURES TEST

Investigator(s): Neil Salkind, Ph.D., Assistant Professor, Department of Psychology, University of Kansas, Lawrence, Kansas 66045.
Purpose: To develop norms for the Matching Familiar Figures Test (MFF).
Subjects: Approximately 7,000 individuals, ages 4 to 14, and some older adults.
Methods: Approximately 150 researchers who have used the MFF were contacted and asked to participate in a norming project. Each researcher was to forward all available data to the project director, so that he could eventually combine all data and develop age percentile norms for errors, latencies, and two measures: I score (impulsivity) and E score (efficiency).
Duration: September 1975-December 1976.
Publications: Final norms are available from the investigator.

37-DE-1 CLUES TO CONCEPT DEVELOPMENT IN THE PREOPERATIONAL CHILD

Investigator(s): Connie Steele, Ed.D., Assistant Professor; and Elizabeth J. Hrncir, Student, Department of Home and Family Life, College of Home Economics, Texas Tech University, Lubbock, Texas 79406.
Purpose: To define actual distinctions occurring in a child's transitional state from preconceptual to intuitive thought through the use of Piagetian based tasks.
Subjects: Nine children: three girls and six boys, ages 2 to 5. The children were selected from the Texas Tech Research Lab and the Lubbock Child Development Center. The sample groupings were not based on socioeconomic status or ethnicity.
Methods: Four Piagetian based tasks were developed and administered to the children. Each task presentation and child response to specific questions were recorded on video-tapes. The data will be coded and analyzed to determine if a hierarchy of sequential steps (when combined with all tasks and all children) will constitute a three-dimensional decalage. Significant results will be determined from individual children's responses not only in relation to the other three tasks but also in relation to the other children.
Findings: Preliminary analysis of codings of children's developmental behaviors in response to specific tasks and questions determines a definite distinction of preconceptual and intuitive behaviors, as well as behaviors that seem inconsistent and sporadic. A total analysis of the three-dimensional graph may underline possible transitional behaviors from preconceptual to intuitive thought in the child's development.
Duration: January 1976-December 1976.

37-DE-2 THE DEVELOPMENT OF SPATIAL CONCEPTS IN LANGUAGE AND THOUGHT

Investigator(s): Ellen Bialystok, Doctoral Student, Department of Applied Psychology, Ontario Institute for Studies in Education, 252 Bloor Street West, Toronto, Ontario, Canada M5S 1V6.

Purpose: To discover how children develop a structure for representing increasingly complex dimentionalized spatial relations.

Subjects: 48 girls and boys, ages 3.2 to 4.11.

Methods: Two principles are postulated that describe this development and lead to predictions about the order in which various spatial relations are mastered: the Principle of Invariance, which predicts that invariant relations will be learned before variable ones; and the Principle of Information, which predicts that relations with fewer features will be learned before those with a greater number. Two main predictions of the study were (1) vertical relations (over, under) should precede horizontal relations (in front), and (2) internal relations between the parts (top) should precede external relations between objects (over). The design of the investigation consisted of presenting four tasks to each subject. Four orders of presentation were constructed, so that in no two orders was a task preceded or followed by the same task. Subjects were randomly assigned to the four orders until each order contained six males and six females. The four tasks presented are (1) Object Placements: Subjects were presented with three toy objects (a car, a bottle, and a block). The experimenter then gave two sets of instructions. First, place an adhesive red dot on the top, bottom, front, and back of each object. Then, place a small wooden star over, under, in front of, and behind each object. (2) Picture Selection: Two sets of 3 x 5 photographs were taken of the objects. In the first set, the spatial parts (the top, etc.) were indicated in red. In the second set, the wooden star was placed in some position (over, etc.) relative to each of the objects. The task required subjects to select the one picture from a group of four that corresponded to the tester's description. (3) Picture Descriptions: Each picture used in the previous task was presented one at a time. The subject was required to either tell what part of the object was red (internal description) or where that star was in relation to the object (external relation). (4) Memory for Relations: A box was constructed and painted black on the inside. A rectangular hole was cut on one side, and on the opposite side, a peephole was created. The interior of the box was illuminated by two small lights attached to an electronic timer. A set of pictures was taken which contained the car in the center and three small wooden objects, one on each plane around the car. The three planes were vertical, lateral, and frontal. A trial consisted of placing one of the pictures in the rectangular hole and illuminating the box for 12 seconds while the subject looked at the picture through the peephole. After this, subjects selected the picture they just saw from a group of four pictures that contained the correct picture and one picture with an error in each of the three planes.

Findings: The results of all four tasks supported the hypothesis that vertical relations would be learned before horizontal ones. This was evident for all the measures and for all the stimuli used. The support for the second hypothesis concerning internal and external relations was more subtle. The predicted ordering was supported, but an interaction with the stimulus also occurred. The internal relations for stimuli which possessed intrinsic parts, such as the car, were learned before the internal relations for those stimuli not possessing such parts. It was demonstrated, nonetheless, that acquisition of the external relations relies on prior mastery of the corresponding internal relations.

Duration: September 1974-June 1976.

37-DF-1 CONTROL AND STRUCTURE IN SIMPLE PROBLEM SOLVING

Investigator(s): Joseph M. Scandura, Ph.D., Professor, Structural Learning and Educational Design, Graduate School of Education, University of Pennsylvania, Philadelphia, Pennsylvania 19174.

Purpose: To determine (1) the mechanisms by which a subject retrieves information in problem solving; (2) how a subject comes to understand problem statements and defines underlying problems before attempting to solve them; and (3) when a subject knows two or more rules for solving a given problem, why certain specific rules are chosen. To increase understanding of the nature and role in problem solving of control mechanisms, which determine how people use their available knowledge (rules); and to ascertain information concerning the possibility of devising special training procedures suitable for people with particular individual differences.

Subjects: 80 children, ages 7 and 8 and ages 4 and 5.

Methods: The research involves a deterministic theory; therefore, these experiments are being run under idealized, memory-free conditions. The first step is to determine the computational analytic adequacy of the proposed *first approximation* control mechanism. Where analysis shows that the first approximation mechanism is not adequate, parsimonious alternatives will be devised and tested. This procedure will be followed with various age groups to determine if younger children use the same mechanisms that the older children use, and if not, when and how these mechanisms develop.

Duration: May 1975-August 1978.

Cooperating group(s): National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

Publications: *Human problem solving: Synthesis of content, cognition, and individual differences with educational implications.* New York: Academic Press (in press).

MASTERY MOTIVATION: ITS CONCEPTUALIZATION AND MEASUREMENT IN INFANCY

Investigator(s): L. J. Yarrow, Ph.D., Research Psychologist; G. A. Morgan, Ph.D., Research Psychologist; K. D. Jennings, Ph.D., Research Psychologist; J. L. Gaiter, Ph.D., Research Psychologist; and R. J. Harmon, M. D., Research Associate, Social and Behavioral Sciences Branch, National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare, Bethesda, Maryland 20014.

Purpose: To develop, for infants, measures of motivation to master the inanimate environment; and to investigate the validity and usefulness of these measures by looking at the relationships between them and several independent measures of infant functioning.

Subjects: 23 boys and 21 girls, ages 12 to 13 months, from middle class families.

Methods: Each infant was observed in three situations: during free play in the laboratory, during a structured session designed to measure attempts at mastery, and during developmental tests which were given at home. Each of the sessions was conducted independently; i.e., the infant was seen by a different experimenter-observer who had no knowledge of his performance in the other sessions. In the free play session, the infant was provided with a wide variety of toys and household objects, while the mother was interviewed in the same room. A 15-minute segment from the middle of the play session was videotaped and later coded. The basic data consisted of counts of the number of 20-second intervals in which specific types of behavior occurred. Exploratory behavior was distinguished from more cognitively mature play (e.g., combining objects,

appropriate use of objects, producing effects). The infant's sustained attention to a single object, persistence at difficult tasks, and attempts to solve problems were also coded. In the session developed to measure motivation to master the inanimate environment, there were three types of tasks. The first provided opportunities for the infant to obtain clear visual and/or auditory feedback through his actions (e.g., pulling a lever produced a click and moving lights). The second task involved problem solving (e.g., reaching around a glass barrier to obtain a toy). In the third task, the infant was given problems which required the use of emerging spatial relations and fine motor skills (e.g., pegs were to be put in holes, and blocks in a bottle). Several measures were derived from the tasks: (1) a persistence score (a measure of the time he engaged in sustained task-oriented behavior); (2) some measures of the infant's attitude toward the task (e.g., time before involvement in the task, expressions of positive and negative behavior); (3) a measure of his interest in exploration (the time spent exploring the task materials); and (4) a measure of skill (the number of tasks solved). In a separate session at 13 months, the infants were tested on the Bayley Scales of Infant Development and the Uzgiris-Hunt Object Permanence Scale. The Bayley Scales yield indexes of psychomotor development (PDI) and mental development (MDI). To obtain measures of more differentiated aspects of infant functioning, four clusters were derived: problem solving, perceptual discrimination, language, and practicing spatial relations skills (which included items requiring repetition of a skill; e.g., putting cubes in a cup).

Findings: Results indicated fairly high consistency across sessions when the tasks were similar, but similar measures on very different tasks were not highly related. For example, the persistence scores on the three mastery motivation tasks were only modestly interrelated, indicating that types of problems tap different aspects of cognitive-motivational functioning. On the other hand, the persistence cluster on the Bayley test (Practicing Spatial Relations Skills) was highly correlated ($r = .66$) with the persistence score on conceptually similar tasks during the mastery motivation session. Infants who had not yet acquired the cognitive or fine motor skills required to solve a task did not persist at it as much as infants who had these skills, at least in emerging form. Infants who had not completely mastered these skills persisted on those tasks which represented a challenge, tasks which were neither too easy nor too difficult for them. Furthermore, persistence in mastery motivation tasks was significantly correlated with performance on the Bayley test ($r = .60$ with MDI). Similarly, those who persisted on the Bayley test solved more of the mastery tasks ($r = .45$). Cross-session correlations were especially high between similar tasks. For example, persistent practicing of spatial relations skills in the mastery motivation session was significantly related to performance on the conceptually similar Bayley Cluster, Perceptual Discrimination ($r = .74$). The findings from the free play session suggest that the simple assumption of a link between the amount of general exploration and cognitive ability is not enough. The amount of time the infant spends in exploration shows low and inconsistent relationships with cognitive ability. However, the quality of exploration shows clear relationships to cognitive development. Significant relationships were found between the quality of exploratory play and cognitive performance in the other two sessions; i.e., to the number of problems solved in the mastery session and to the Bayley MDI. Touching, mouthing, and banging probably extract only a minimal amount of information regarding the properties of objects. Behaviors more specifically adapted to the particular object (e.g., combining objects) elicit a greater amount of information and feedback. On the whole, these results show the intertwining of motivation to master the inanimate environment and cognitive functioning. Results indicate that persistence is not only essential for solution of problems — it is also important in perfecting skills.

Duration: 1974-1977.

Publications: Symposium presented at the Southeastern Conference on Human Development, Nashville, 1976: Yarrow, L. J.; Morgan, G. A.; Jennings, K. D.; Gaiter, J. L.; and Harmon, R. J. Mastery motivation: A concept in need of measures.

37-DG-1 PATTERNS OF PERCEPTUAL CHANGE

Investigator(s): Alf L. Andersson, Ph.D., Associate Professor, Department of Psychology, Lund University, Paradisgaten 5, S-223 50 Lund, Sweden.
Purpose: To determine the patterns of perceptual change in children, ages 7 to 15, by a cross-sectional study of the Rod-and-Frame Test (RFT) and the spiral aftereffect (SAE) technique.
Subjects: 124 girls and 124 boys, ages 7, 9, 11, 13, and 15 attending two schools in the same area of the city of Malmö in southern Sweden.
Methods: RFT data on deviations from apparent verticality were obtained using 20 trials per subject. On each trial, the starting position of the rod was 20 degrees to the right (seen from the subject's side), and the starting position of the frame was also 20 degrees to the right. The SAE technique involved the subject inspecting the center of a rotating, arithmetic spiral for 45 seconds, and immediately after the inspection, projecting the aftereffect of apparent expansion and/or approach onto a stationary circle. As soon as the subject reported termination of the aftereffect, the next trial with the rotating spiral was started. Basic scores were the SAE durations on each of 10 trials. Analyses of variance, including trend analyses, were performed on the cross-sectional RFT and SAE scores.
Findings: RFT deviation decreased with age to reach a minimum at age 13. Boys counteracted the frame influence, as the RFT trials proceeded, to a higher extent than girls. This sex difference disappeared with age. An increase in SAE duration, found previously in 5-year olds, appeared here in 11-year olds, but later in the series of trials rather than initially as with the younger children. Relations between RFT and SAE scores were found mainly in 7-year olds; i.e., at an age when perceptual-figural relations still dominate the cognitive organization of some children. The RFT data fit the description of development as a gradual or continuous process, while the SAE data suggest cognitive growth to involve progressive shifts between objectivized and self-centered modes of representation.
Duration: 1970-completed.
Cooperating group(s): Swedish Council for Social Science Research.

37-DG-2 CHILDREN'S SPATIAL PROBLEM SOLVING

Investigator(s): Mariane Stenild, Ph.D., Lecturer, Institute of Psychology, University of Aarhus, 4 Asylvej, 8240 Risskov, Aarhus, Denmark.
Purpose: To describe the development of spatial imagery and its relation to perception.
Subjects: 175 seven-year-old and 75 nine-year-old school children.
Methods: The design was a test, treatment, retest design with each child tested individually. The spatial task used required the child to imagine what another subject could see in a position different from the child's position. Treatment consisted of the child completing a series of sequential tasks on a learning machine. Four variations of the treatment were (1) learning sequence was programmed to follow capacities of the child, (2) learning sequence was linear, (3) treatment involved a perceptual procedure, and (4) a cognitive strategy was employed in sequential tasks. The different types of strategies will be analyzed.
Duration: 1969-1977.

37-DH-1 STARTING POINTS

Investigator(s): Brian MacWhinney, Ph.D., Assistant Professor, School of Arts and Sciences, University of Denver, 2115 South University Boulevard, Denver, Colorado 80210.
Purpose: To determine the relation between linguistic and perceptual starting points.
Subjects: 80 Hungarian and English boys and girls, ages 3 to 25.
Methods: Picture description tasks with and without sentence verification will be administered to the children. Six different eye movements will be measured on five different linguistic probe conditions. Examples of the probe conditions are: What is the boy doing? What is happening to the dog? and What is the boy doing to the dog?
Findings: Starting points in sentences are not determined by only the given new contrast.
Duration: 1975-1976.
Cooperating group(s): (1) National Institute of Mental Health; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare. (2) Grant Foundation.

37-DH-2 LANGUAGE DURING THE SENSORIMOTOR PERIOD

Investigator(s): David Ingram, Ph.D., Assistant Professor, Department of Linguistics; and Werner Neufeld, B.A., Department of Psychology, University of British Columbia, Vancouver, British Columbia, Canada V6T 1W5; and Judith Ingram, M.A., 3275 West 38th Avenue, Vancouver, British Columbia, Canada.
Purpose: To compare linguistic stages of development with Piaget's sensorimotor stages, focusing on Stages 4 through 6, in the child's first 2 years.
Subjects: Three females and two males were observed from age 6 months to 2 years.
Methods: Each subject was visited in the home at 2-week intervals. During each visit, the child was observed for behaviors to determine his/her sensorimotor stage. Tasks used covered a wide range of Piagetian observations. Tape recordings (15 to 30 minutes) of the child's language production were also made.
Findings: A child's first words do not appear until Piaget's Stage 5. By the end of this stage, comprehension is improved to a range of 25 to 50 items, and productive vocabulary is still small, 6 to 7 items. Stage 6 marks rapid improvement in language.
Duration: January 1975-June 1976.

37-DH-3 AN INVESTIGATION OF THE LANGUAGE AND THOUGHT PROCESSES IN YOUNG ANGLO-, BLACK-, AND MEXICAN-AMERICAN CHILDREN OF LOW STATUS PARENTS

Investigator(s): John Hollomon, Ph.D., Associate Professor, Early Childhood Education, Division of Education, University of Texas, San Antonio, Texas 78285; and members of the San Antonio Independent School District: Yolanda Gonzalez, B.S. (Teacher-Specialist for Bilingual Program), 621 East Harlan Street, San Antonio, Texas 78214; Gladys Garcia, B.S. (Language Learning Disabilities Teacher), 5916 Fairmeade Street, San Antonio, Texas 78242; and Karen Emrich, B.S. (Early Childhood Education Teacher), 6100 North West Loop 410, San Antonio, Texas 78238.

Purpose: To make a cross-cultural study of the abilities of Anglo-, Black-, and Mexican-American young children (of low social status parents) to process a given set of language and thought universals; to compare these abilities in order to determine ethnic influence; and to relate these to the social status of each of the three groups.
Subjects: 27 children: nine children per ethnic group divided into three subgroups according to age and grade levels. The children are ages 5 to 7 and in grades kindergarten to 2.
Methods: The random sampling technique was used to select the subjects from three public elementary schools, which served the social class and ethnic groups required by the design of the study. The instrument (33 question forms, including 39 questions arranged in an ascending order of difficulty) was a modified version of the Information-Eliciting Question Instrument (IEQI) developed by the principal investigator. The interviewing technique was used to collect the data. A phrase structure analysis was made of the data to determine the extent to which the grammatical structures in the responses of the subjects would reveal observable and quantifiable differences in their language and thought abilities to process a given set of universal concepts, as these relate to their ethnic identities and social status.
Findings: The combined results for each ethnic group indicated, with a few exceptions, that each had acquired an observable and quantifiable measure of the language and thought processes elicited. These revealed a measure of the language and thought processes they had already acquired relative to those required for academic success in school. However, there was a noticeable range in the number of responses indicating inter-ethnic differences in the ability to classify objective data and social reality. More phrases and more sentences were elicited from the Anglo- and Black-American groups respectively than were elicited from the Mexican-American group. A comparison of the total number of responses elicited revealed no differences between the Anglo- and Black-American groups, but a difference of 107 responses between these two groups and those of the Mexican-American group. These results revealed (1) something of the already formed conceptual systems of the subjects relative to classification, seriation, spatio-temporal relations, and causality; (2) that the proper structuring and sequencing of questions can evoke both the particular levels of mental operation and conceptual levels elicited; and (3) the patterns of mental operations appear not to be adversely affected by ethnicity; whereas, social status appears to affect levels of speech production across ethnic groups.
Duration: September 1975-completed.
Publications: The research report of the investigation was presented at the Fifth Annual International Bilingual/Bicultural Education Conference, April 1976 in San Antonio, Texas and was submitted for consideration for publication in the proceedings of that conference.

37-DH-4 A LONGITUDINAL STUDY OF MODES OF SECOND LANGUAGE ACQUISITION

Investigator(s): Agatha Sidlauskas, Ph.D., Director, Child Study Centre, University of Ottawa, 265 Nicholas Street, Ottawa, Ontario, Canada K1N 6N5.
Purpose: To discover *how* an individual acquires a foreign language.
Subjects: 33 girls and boys, ages 5 through 8. The children are unilingual French or or English, have IQs of at least 100, and are from middle and upper middle class backgrounds.
Methods: The investigator will attempt to prove the hypothesis that the aptitude for second language acquisition, as well as the ability to communicate freely, are features of personality and depend more on affective and social development than on IQ or teaching

methods. During a 3-year clinical study, the following data were collected: complete psychological battery, IQ and achievement tests, sociometric data, behavioral rating scales, taped conversations, evaluation of teacher-child relationships, analysis of syntax and grammatical transformations, study of temperamental variables, and audio-psycho-phonatory battery.
Duration: 1970-1976.
Cooperating group(s): Department of the Secretary of State of the Government of Canada.
Publications: A synthesis of all the findings will be published in one volume in 1977.

37-DH-5 THE CONTEXTS OF COMPREHENSION: THE CHILD'S USE OF CONTEXT IN THE COMPREHENSION OF SOME GRAMMATICAL AND SEMANTIC RELATIONS

Investigator(s): David R. Olson, Ph.D., Professor; and Angela Hildyard, M.A., Graduate Student, Ontario Institute for Studies in Education, 252 Bloor Street West, Toronto, Ontario, Canada M5S 1V6
Purpose: To examine the use of verbal and pictorial context cues in the child's comprehension of the grammatical active-passive relation and the semantic relations of more-less and bigger-smaller.
Subjects: 58 girls and boys, ages 7 to 8, who are in Grade 2 in a metropolitan Toronto public school; and 42 girls and boys, age 5, who are in kindergarten in a metropolitan Toronto public school. All children were native English speakers.
Methods: Represented measures designs have been employed to test children individually on their comprehension of either the active-passive, bigger-smaller, or more-less relationships under various conditions of contextual elaboration. Subject's task is to judge whether, in light of an original statement, a second statement in the form of a question is true or false. Statements vary in that subjects may or may not be familiar with the described characters; original statements may or may not be accompanied by pictures (depicting part or all of the elements described in the statement); and finally, statements may or may not be embedded within the framework of a story. Errors and RT's are recorded for each subject and are separately analyzed by means of repeated measures of analysis of variance. Process models are also developed for comparison with adult models of processing in similar verification tasks.
Findings: The more well-known the characters in the statements, the better able are children to draw correct implications, to see, for example, that an active implies a passive and so on. An analysis of the decision processes for active-passive pairs has shown that while adults when confronted with a mismatch in the voice of the verb recode only the verb, children recode the entire proposition into a form compatible with the voice of the verb of the question. This recoding is possible only for propositions assimilated to a coherent, comprehensible knowledge base. The evidence suggests that children achieve through assimilation and redescription what adults achieve through the detection of logical entailments.
Duration: November 1974-June 1976.
Cooperating group(s): Canada Council.

37-DH-6 SENTENCE STRUCTURE AND READABILITY

Investigator(s): Ramsay W. Selden, M.A., Department of Research Methodology, University of Virginia, 266 Ruffner Hall, Charlottesville, Virginia 22903.
Purpose: To identify frequency-statified syntactic structures which can be used as variables in estimating the readability of text.
Subjects: 250 public school students at each age level: 7, 9, 11, 14, and 17. The subjects will be randomly distributed by sex, level of academic ability and achievement, and other background variables.
Methods: The syntactic structures will be identified in student writing and in basal reader prose. Once frequency strata for syntactic structures are identified, a multiple linear regression analysis will be used to test the significance of structure commonness in estimating readability of test passages, controlling other known predictors of comprehensibility. The criterion values will be student performance on content questioning on the McCall-Crabbs Standard Test Lessons in Reading.
Duration: April 1976-August 1976.
Cooperating group(s): Office of Federal Programs, Virginia Department of Education.

37-DH-7 PREDICTION OF READING ABILITY FROM EARLY LANGUAGE SKILLS

Investigator(s): Karen M. Fischer, Ph.D., Assistant Professor, Department of Education, Gloucester County College, Tanyard Road, Sewell, New Jersey 08080.
Purpose: To identify preschool syntactic, semantic, and phonological precursors of reading readiness and reading skills.
Subjects: 42 boys and girls from white, middle class families.
Methods: This research was a longitudinal design with stepwise and multiple regression analyses used to relate skills at age 3 to school age skills. The children were tested at age 3, at the completion of kindergarten, and at the end of first grade. Children were individually tested in their homes for reading skills, phonology, morphology, and syntax skills. The research instruments used were various tests of language skills at age 3, and the Metropolitan Reading Readiness Test and the Stanford Achievement Test at school age. Correlation of the children's linguistic skills at age 6 will be made with performance at age 3 to discover important early predictors of reading and communicative skills. An examination will be made of the relative importance of early phonological, morphological, and syntactic encoding and decoding abilities to predict school related language skills. Mothers were tested and ranked for social class.
Findings: Early language skills showed a significant multiple correlation with Metropolitan Readiness scores.
Duration: June 1974-December 1976.
Cooperating group(s): National Institute of Education, U. S. Department of Health, Education, and Welfare.
Publications: Results are available from the investigator.

37-DH-8 SOCIAL CONTROL AND THE PROCESS OF SCHOOLING: A STUDY OF TWO KINDERGARTEN SETTINGS

Investigator(s): Kathryn M. Borman, Ph.D., Assistant Professor, Department of Learning, Development, and Social Foundations, University of Cincinnati, Cincinnati, Ohio 45221.
Purpose: To assess the sociolinguistic features of school children's speech and that of their teachers, with special attention to analysis of sociolinguistic features of social control language.
Subjects: Six *focal children:* three boys and three girls, ages 5.4 to 6.3, from two public schools and kindergartens in Minneapolis.
Methods: The study employs a factorial design and uses semiprojective techniques, structured interviews, and poststudy. Data will be gathered from transcribed audiotapes which were recorded for 10-minute periods and taped in September and January. A total of 96 transcripts were made, four for each child each season. In analyzing the tapes, frequency counts were made and sociolinguistic markers were used.
Duration: September 1975-August 1976.
Cooperating group(s): Southeast Alternatives Evaluation Group.
Publications: Results are available from the investigator.

Personality

37-EA-1 BIOCHEMICAL FACTORS IN BEHAVIORAL SEX DIFFERENCES

Investigator(s): Eleanor E. Maccoby, Ph.D., Department of Psychology, Stanford University, Stanford, California 94305.
Purpose: To determine the extent to which biochemical factors underlie known behavioral sex differences in the first year of life; and to determine why some children develop these behaviors earlier and why some develop them later.
Subjects: 300 infants divided into four cohorts: half of the infants are female; half are male, from a wide distribution of socioeconomic strata.
Methods: The relationship between sex hormones and behavior will be studied in two groups of human infants: Group 1 studied longitudinally at day 2, at 3 weeks, and at 6 months; Group 2 studied longitudinally at age 3 months and at 13 months. Infants will be drawn from those born at the Stanford University Hospital. Behaviors have been chosen for which sex differences have been shown to be reasonably reliable and which have proved predictive of behavior at later ages. For all infants studied, blood samples will be taken at birth and assayed for testosterone, androstenedione, and estrogen. Behaviors to be studied during infancy include (1) neonatal tactile sensitivity and motor coordination, (2) quieting, (3) sleep-wake cycle, (4) responsiveness and attention to visual and auditory stimulation, (5) barrier behavior, and (6) latency to resume normal activity after mild stress. Maternal behavior and its relation

to both the infants' biochemical scores and their behavior will also be studied. In year I, an attempt was made to correlate hormone levels with (1) tactile sensitivity and prone head reaction at age 2 days; (2) the same measures, plus reaction to maternal quieting behavior at age 3 weeks; and (3) attention to visual and auditory stimuli at age 6 months. In year II, the size of the sample for cord-blood measurements will be increased to 120, so as to permit the selection of 20 infants with low hormone scores or ratios, and 20 with high scores or ratios, relative to the behavior scores established in year I. (The infants will be examined at 3 months and again at 13 months.) Methodologies include observations of the infants and of mother-child interactions, interviews, and questionnaires.

Duration: 1976-1981.

Cooperating group(s): (1) National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare. (2) Ford Foundation. (3) Spencer Foundation.

37-EA-2 THE EFFECTS OF VARYING EXPERIENCES OF THE MOTHER'S PRESENCE ON CONTACT BEHAVIORS IN 14- AND 19-MONTH-OLD CHILDREN

Investigator(s): Felicisima C. Serafica, Ph.D., Assistant Professor; and Timothy Moragne, B.A., Graduate Student, Department of Psychology, Langley Hall, University of Pittsburgh, Pittsburgh, Pennsylvania 15260.

Purpose: To gain further understanding about the development of contact as an attachment behavior.

Subjects: 40 female, Caucasian, middle class infants, equally representing two age groups: 14 months and 19 months.

Methods: The specific hypotheses being investigated in this study are (1) the effects of presenting the mother's face only to an infant following her absence will vary as a function of the infant's age, and (2) the effects of presenting the mother's voice only following her absence will vary as a function of the infant's age. Subjects will be randomly assigned to a group who will only be exposed to the mother's voice, or to a group exposed to the mother's face only. The infants are observed in a series of four 3-minute episodes: (1) with the mother, (2) alone, (3) exposed to the mother's face or voice, and (4) with the mother. Sensorimotor, perceptual, and conceptual-symbolic contact behaviors will be recorded at each 10-second interval of an episode. Signalling, approach, and search proximity behaviors will be monitored in a similar manner.

Duration: January 1976-July 1976.

Cooperating group(s): Clinical Psychology Center, University of Pittsburgh.

37-EA-3 THE OSLO PROJECT

Investigator(s): Åse Gruda Skard, Mag.Art., Associate Professor (Emeritus), Institute of Psychology, University of Oslo, Thv. Meyers Gate 46, Oslo 5, Norway.

Purpose: To investigate the psychological development in children reared in a Norwegian setting; and to determine the interplay between parents and children in this milieu.

Subjects: 18 normal Norwegian children (21 at the beginning, 19 at the end of the first year, and 18 from the six-year stage); and their families.
Methods: The design of this study will involve the comparison of individual cases to general theories for development and will follow special traits (e.g., oral behavior). Special techniques will be followed longitudinally (Rorschach, Rosenzweig, doll play). The children and their families will be studied in their surroundings in the following stages: prenatal, early childhood, childhood, and youth. Data will be gathered through observations, interviews, projective tests, and IQ tests.
Duration: 1950-continuing.

37-EA-4 ADJUSTMENT: A LONGITUDINAL STUDY

Investigator(s): David Magnusson, Ph.D., Professor; and Anders Dunér, Ph.D., Assistant Professor, Department of Psychology, Stockholm University, Box 6706, 113 85 Stockholm, Sweden.
Purpose: To determine the behaviors, occurring in the early childhood years, that are important for later development; to determine factors in the children's environment that influence development and adjustment; and to study the importance of extrinsic and intrinsic adjustment of children at school for later personal development.
Subjects: Three cohorts of 1,000 children each, ages 10, 13, and 15 at initiation of research. All the groups were investigated during the school year at ages 10, 13, 15, 16, 18, and 19.
Methods: This investigation was designed to study the subjects at successive ages on a longitudinal basis. Intensive studies are made of special groups and controls for certain problems. Data will be gathered through questionnaires, tests, and ratings; and interviews, observations, and physiological measurements will be taken for small samples. Psychological and methodological models will be analyzed for open systems, and other statistical analyses will be by regression analysis, analysis of variance, and discriminant analysis.
Findings: Reports have been developed that give descriptions of age groups and treatment of developmental problems. Reports cover adolescent norms and behavior, symptoms, social relations, delinquent behavior and attitudes, choice of educational and vocational lines, and segregation at school.
Duration: 1964-continuing.
Cooperating group(s): (1) The National School Board of Education. (2) The Office of the Chancellor of the Swedish Universities. (3) The Social Science Research Council.
Publications: Magnusson, D.; Dunér, A.; and Zetterblom, G. *Adjustment: A longitudinal study*. Stockholm: Almqvist and Wiksell, 1975; New York: Wiley and Sons, 1975.

37-EA-5 A LONGITUDINAL STUDY OF INFANT TEMPERAMENT

Investigator(s): Mary K. Rothbart, Ph.D., Assistant Professor, Department of Psychology, University of Oregon, Eugene, Oregon 97405.

Purpose: To develop parent report and observational measures of the following temperament dimensions: activity level, general positive intensity, general negative intensity, fear, adaptability, rhythmicity, persistence, distractibility, attachment, and anger frustration; and to study the longitudinal development of those characteristics in subjects at 3, 6, and 9 months of age.

Subjects: 450 infants, ages 3 to 12 months, in the parent rating instrument item analysis sample; 50 infants in the longitudinal sample.

Methods: The design of the research involves (1) the development of a parent report instrument based in part on the Thomas *et al.* interviews, and (2) development of observational categories for infant temperament to be used in three home visits and during administration of the Bayley Scales of Infant Mental and Motor Development. Cross-validation will be made of parent report, home, and laboratory observations. Possible stability in temperament measures during the infants' first year will be investigated, and interrelationships among temperament measures will be examined.

Findings: Item analysis has been completed, and a refined parent report instrument is in preparation for longitudinal study. Observational codes have also been developed.

Duration: 1973-continuing.

Cooperating group(s): National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

37-EB-1 THE DEVELOPMENT OF SELF-CONTROL IN CHILDREN

Investigator(s): Beatrice B. Whiting, Ph.D., Professor, Laboratory of Human Development, Graduate School of Education, Harvard University, Larsen Hall, Appian Way, Cambridge, Massachusetts 02138.

Purpose: To determine the relationship of age, sex, and family lifestyle to the development of self-control, especially in concern for others and acceptance and maintenance of rules for proper behavior as defined by the family and community; and to assess the development of five types of social interaction between adults and children (ages 2 to 8) and between children and children.

Subjects: 114 children from 42 homesteads in the village of Ngecha in Kenya.

Methods: The study focuses on the effect of age, sex, setting, task assignment, and modernization on five types of social behavior: egoistic dependent, egoistic dominant, nurturant, prosocial, and social. The children were observed for 320 hours and 25,400 acts were observed and entered on IBM tape. Unit of analysis is the proportion of acts between frequently occurring dyads (an actor and a receiver). Examples of the dyads are son to mother, mother to son, child to older child. Economic, social structure, and education background material, collected in the 42 homesteads, will be related to the dyad types discovered by the analysis. Wherever frequencies make it possible, dyads (27 children included) observed in 1968-69 and again in 1972-73 will be analyzed for changes with age. The rapidity of a child's shift in social behavior between 5 and 8 years will be compared with his acceleration in cognitive development as measured by a battery of tests (e.g., motor, auditory integration, conservation memory) administered to each sample child and a total of 300 Ngecha children in this age group. Dyad proportion scores will be compared with those of a sample of children with the same cultural background whose fathers are college graduates. These families live in a suburb of Nairobi.

Duration: 1968-continuing.

Cooperating group(s): (1) Bureau of Educational Research, University of Nairobi. (2) National Institute of Mental Health, Health Services and Mental Health Administration, U. S. Department of Health, Education, and Welfare. (3) Carnegie Corporation.

Publications: Whiting, B. and Edwards, C. A cross-cultural analysis of sex differences in the behavior of children aged 3-11. *Journal of Psychology*, 1973, 91, 177-188.

37-EB-2 MODIFICATION OF SELF-ESTEEM AND INCREMENT OF PROSOCIAL SENSITIVITY

Investigator(s): Maria Jarymowicz, Ph.D., Associate Professor, Institute of Psychology, University of Warsaw, Stawki 5/7, 00-183 Warsaw, Poland.
Purpose: To attempt to increase children's sensitivity to the problems of other people.
Subjects: 121 boys, ages 16 to 18, selected from a sample of 680 subjects. Eighty-five boys had problems concerning their self-value: subjects with a low self-approval level ($nC_1 = 20$; $nE_1 = 27$); subjects with moderate or high but inconsistent self-esteem ($nC_2 = 20$; $nE_2 = 18$). Thirty-six boys were without problems but had moderate or high and consistent self-esteem ($nC_3 = 16$; $nE_3 = 20$).
Methods: Control subjects were not exposed to any influence. Experimental subjects were subjected to the reinforcing procedure of their self-image/approval from classmates, from an authority, and from experience of satisfaction over their own performances. Then dependent variables were measured: (1) the accuracy of recognition of problems and emotions of movie heroes, and (2) motivation to cooperation oriented to help for others. Variance analyses were made.
Findings: Data seem to be consistent with expectation that reinforcement given to persons with self-value problems would contribute to a reduction of egocentric tension and thence to an increase of prosocial sensitivity. Scores were $E_1 > C_1$; $E_2 \geq C_2$; $E_3 \approx C_3$.
Duration: October 1974-completed.
Publications: *Polish Psychological Bulletin*, 1977, 1. (Title not yet translated.)

37-EB-3 THE DEVELOPMENT OF THE MARYLAND PRESCHOOL SELF-CONCEPT SCALE

Investigator(s): Donald K. Pumroy, Ph.D., Professor; and Marcia Smith, M.A., Graduate Student, Counseling and Personnel Services, College of Education, University of Maryland, College Park, Maryland 20742.
Purpose: To develop a scale that will measure the self-concept of preschool children.
Subjects: 100 preschool girls and boys.
Methods: Through a variety of pilot studies and review of other instruments, the Maryland Preschool Self-Concept Scale has been developed. It is currently being administered to preschool children so that reliability and validity can be established. The relationship between scores on the instrument and other variables, such as sex and age, will also be investigated.
Findings: Results to date indicate that the preschool children can take the test and will take the test. There appears to be adequate dispersion in the scores received.
Duration: September 1974-December 1976.

37-EC-1 COGNITIVE BASES OF CHILDREN'S MORAL JUDGMENTS

Investigator(s): Shelley E. Taylor, Ph.D., Assistant Professor; David Gottlieb, B.A., Research Assistant; and Audrey Ruderman, Ed.M., Research Assistant, Department of Psychology, Harvard University, 1350 William James Hall, 33 Kirkland Street, Cambridge, Massachusetts 02138.

Purpose: To examine the cognitive bases of children's judgments of morality; to determine how and why moral judgments vary with age; and to demonstrate that the general shift from outcome to intention, around 7 or 8 years, corresponds to the more general shift from iconic to symbolic.

Subjects: Study 1: 42 kindergartners and first graders and 43 fourth graders attending public school in an urban area. Study 2: 60 kindergartners and first graders and 60 fourth graders attending a suburban public school. Study 3: 25 five-year olds and 25 nine-year olds at a summer day camp. Study 4: 24 children, ages 3 years, 9 months to 5 years, 9 months at a day care center.

Methods: The investigation consists of four individual studies. Moral dilemmas consisting of information about a character's motives and the consequences of his actions were devised for each study and were played on a tape recorder to each child individually. In Study 1, the order of motive and outcome information was systematically varied; in Study 2, the concreteness of these two pieces of information was manipulated. In Study 3, imageability was manipulated by illustrating either the motive or outcome information with a photograph. For these three studies, the stories were evaluated according to a star rating procedure devised by Werner and Peter (1973). The children were awarded stars indicating extreme, average, or mild approval or extreme, average, or mild disapproval. In the fourth study, the dependent measure was changed. First, each child was asked to evaluate in his own words an entire story; then, only motive information was played and the child was asked to judge it alone. Lastly, only outcome information was played and evaluated. At the end of each interview, Flavell's (1968) spatial rotation task and the Peabody Picture Vocabulary Test (PPVT) were administered.

Findings: In Study 1, the impact of the order of information depended on the sex of the child. Young males used the most recent information to evaluate the story; whereas, young females focused on outcome information. In Studies 2 and 3, regardless of the level of concreteness of imageability, the number of 5- and 6-year olds who used motive information was not significantly different from the number who used outcome information. The young children who based their moral judgments on the motive were not simply advanced for their age. They considered only the motive in reaching a judgment; in contrast, the older children (ages 9 to 10) considered both the motive and the outcome, but discounted the outcome because it was accidental. In Study 4, it was again observed that young children (ages 4 to 6) do not prefer the outcome to the motive as a basis for making moral judgments. Furthermore, when asked to evaluate the motive information alone, an overwhelming majority could do so. The results dispel any doubt that young children understand motives and can use them to make moral judgments. A relationship between decentering and reasoning level was also established. A significant amount of variance in reasoning level was explained by the children's scores on the spatial rotation task, a measure of role-taking and decentering, even after any variance attributable to age and the PPVT had been accounted for.

Duration: June 1975-May 1977.

Cooperating group(s): National Institute of Mental Health; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

Publications: Information is available from Dr. Taylor.

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37-EC-2 YOUTH AND MORAL DILEMMAS

Investigator(s): Norma Haan, Ph.D., Research Psychologist, Institute of Human Development, University of California, Berkeley, California 94720.
Purpose: To investigate (1) cultural differences and sex differences, (2) the relationship of moral reasoning and action, and (3) moral change.
Subjects: 84 adolescents divided into six experimental and four control subjects in six friendship groups (14 subjects in each group). The subjects are white or black from various social classes.
Methods: The research design involved a pretest and two posttest interviews. Experimental subjects work in simulated moral conflicts for five sessions of 3 hours each. Kohlberg and interpersonal moral dilemmas were used for interviewing. Group sessions were observed for moral action, ego processing, and group functioning.
Findings: There were significant changes from pre- to posttests in moral reasoning. Reasoning associated with the Kohlberg definition more fluctuating in group situations than interpersonal.
Duration: June 1975-June 1976.
Cooperating group(s): Hazen Foundation, New Haven, Connecticut.

37-EC-3 THE EFFECT OF PARENTAL COGNITIVE STYLES AND LOCUS OF CONTROL ON THE MORAL DEVELOPMENT OF CHILDREN

Investigator(s): Michael Schleifer, Ph.D.; Professor; and Ellen Posnanski, Graduate Student, Department of Education, University of Quebec, Montreal C. P. 8888, Quebec, Canada.
Purpose: To determine the effect of parental cognitive styles and locus of control on the moral development of children.
Subjects: 20 girls and 19 boys, ages 6.5 to 7.6; and their fathers and mothers.
Methods: The research design employed in this study involved testing the child at school and the parents at home. Each child was seen individually two different times at school. Piagetian type stories were read to the child to elicit moral judgments, and he/she was given the Peabody Picture Vocabulary Test. At the home, the parents were seen separately and were given a reflectivity test (Kagan), a field independence test (Witkin), and a locus of control scale (Rotter). Statistical treatments included correlational analyses, analyses of variance, and chi-square.
Findings: Moral maturity in children correlated significantly with the fathers' (internal) locus of control. Mothers and fathers show different patterns of response in cognitive style: fathers are more reflective, more field independent, and have more locus of control than mothers. In this sample, class, but not education, was controlled. The fathers of females scored the highest on all tests.
Duration: May 1974-September 1976.

37-EC-4 VIGILANCE PERFORMANCE IN CHILDREN: EXPLORATION OF THE EFFECT OF PERSONALITY AND TASK VARIABLES

Investigator(s): I. J. Knopf, Ph.D., Professor and Chairman; Michael McGarry, B.A.; and Richard Rosenberg, B.A., Department of Psychology, Emory University, Atlanta, Georgia 30322.

Purpose: To identify those variables that affect vigilance (attention) performance in school age children.
Subjects: 72 Caucasian third grade boys from the middle socioeconomic level.
Methods: The design of this investigation involved using measures of locus of control and conformity. The subjects were matched on three levels of academic achievement: high, middle, and low. Three groups of locus of control were given a 30-minute visual vigilance task in which there were 24 critical stimuli. Half of each group was given knowledge of results; and half, no knowledge. Essentially the same design was used for conformity with only high and low groups studied.
Duration: April 1976-July 1976.
Cooperating group(s): DeKalb County Public Schools.

37-EC-5 THE RELATIONSHIP BETWEEN CHILDREN'S MORAL JUDGMENTS AND THEIR CLASSROOM BEHAVIOR

Investigator(s): Joan Snook Thrower, Ed.D., Assistant Professor, Department of Psychology, Wheelock College, Riverway at Pilgrim Road, Boston, Massachusetts 02215.
Purpose: To assess relationships between moral stage structure and actual behavior in preadolescent children.
Subjects: 60 boys and girls, ages 10 years 5 months to 11 years 7 months, who have predominantly middle class, suburban backgrounds. The subjects are normal with no emotional or learning disturbances.
Methods: In this study a comparison was made between public and parochial school children. Data were collected through personal interviews and teachers' reports. Instruments used were the standard Kohlberg moral dilemmas and new school situation dilemmas by Thrower and Kohlberg, plus behavioral observations of correlated behaviors with the interviewed dilemmas. Data were analyzed through analysis of variance and correlation matrices were computed.
Findings: Certain behaviors may be correlated to specific moral stage structure; e.g., there was a significant correlation between tattle-taling and moral stage attainment up to conventional level reasoning in the Kohlberg scheme.
Duration: Fall 1975-Spring 1976.
Cooperating group(s): Laboratory for Human Development, Harvard Graduate School of Education.

37-ED-1 MODIFICATION OF IMPULSIVITY IN YOUNG CHILDREN

Investigator(s): Deanna R. Wright Tate, Ph.D., Child Development and Family Living, College of Nutrition, Textiles, and Human Development, Texas Woman's University, P. O. Box 23975, Denton, Texas 76204.
Purpose: To examine the relationship of tutorial enrichment of cognitive processes and reinforcement of lengthened response latency to measurements of impulsivity in 3- and 4-year olds in a typical preschool setting.
Subjects: 48 children, ages 3 and 4, who were classified as impulsive by the Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP). The children were drawn from two nursery schools and four child care centers serving primarily middle and lower class families in the Denton, Texas area.

Methods: The design used for the investigation was a pre-posttest control group design. Subjects were grouped by age and sex and then randomly assigned to a treatment group. Prior to treatment, subjects were given KRISP, Form A and the Slosson Intelligence Test. Experimental subjects met with the investigator alone or in small groups in tutorial sessions twice weekly for a 6-week period, and control subjects received no treatment. During each tutorial session, a reinforcement tally sheet was kept on each subject to assure that reinforcement for increased response latency and systematic search strategies was provided for each subject at a minimum level of two opportunities for reinforcement per minute. The order of the material covered in the tutorials was (1) distinguishing same and different with objects, (2) distinguishing same and different with an object and its picture, (3) distinguishing same and different with pictures only, (4) copying patterns with three-dimensional objects, (5) copying color patterns with two-dimensional objects, (6) copying pattern cards, (7) transforming color patterns to non-color designs, and (8) creating and extending patterns. At the end of the 6-week period, KRISP, Form B was administered to all subjects. Statistical treatment for analysis of the data was a 2 X 2 X 2 factorial analysis of covariance. The effect of the treatment factor on two levels, tutorial and nontutorial treatments, was compared with its influence on the age factor (3- and 4-year olds) and the sex factor (male and female). To determine initial equivalency of the subjects, a 2 X 2 X 2 analysis of impulsivity variance test was performed on test scores where all subjects' scores were classified by each of the three fixed effect factors: sex, age, and treatment.

Findings: Impulsivity pretest scores were independent of both the main effects of age and treatment and of the interaction effects of sex and age; sex and treatment; age, sex, and treatment. Neither main effects nor interaction effects were revealed between groups on efficiency pretest scores. Males were significantly more impulsive than females on the pretest. The 2 X 2 X 2 factorial analysis of covariance, using adjusted pretest scores and IQ scores as covariates, revealed that tutorial subjects were significantly less impulsive on the posttest than were the nontutorial subjects. In addition, an age/treatment interaction was significant. The nature of the relationship was that the 3-year olds who experienced tutorials exhibited greater change toward being less impulsive in comparison to their nontutorial age mates than did the tutorial 4-year olds in relation to theirs.

Duration: September 1974-completed.

37-EE-1 EFFECT OF PARENTAL HORMONE TREATMENT ON CHILDHOOD BEHAVIOR

Investigator(s): Anke A. Ehrhardt, Ph.D., Associate Professor of Psychology in Psychiatry and Pediatrics; and Heino F. L. Meyer-Bahlburg, Ph.D., Research Associate Professor of Psychology in Psychiatry and Pediatrics, Children's Hospital, State University of New York, 219 Bryant Street, Buffalo, New York 14222.

Purpose: To investigate the possible effects of treatment with estrogens, progesterone/progestins, and or thyroid hormone of pregnant mothers on mental abilities and sex-dimorphic behavior of their offspring in late childhood.

Subjects: 70 to 80 girls and boys, ages 9 to 12, with documented prenatal hormone treatment are compared to matched controls with documented lack of prenatal hormone treatment.

Methods: Experimentals and controls are matched in pairs according to date of birth, sex, race, and socioeconomic status. Assessment methods involve psychometric tests, questionnaires, and half-structured interviews with each child and his/her mother. Interviews are tape recorded and rated on previously established scales by two independent raters. Statistical comparison will mainly involve matched-sample procedures.

Duration: June 1974-December 1976.

Cooperating group(s): Spencer Foundation.

37-EF-1 YOUNG CHILD'S RESPONSE TO DENTAL STRESS

Investigator(s): Larry L. Venham, D.D.S., Ph.D., Assistant Professor, Department of Pediatric Dentistry, University of Connecticut Health Center, Farmington, Connecticut 06032.

Purpose: To determine the effects of (1) age on a young child's response to initial dental experience, (2) a series of nonstressful experiences on response to stressful procedures, (3) a series of stressful experiences on subsequent experiences, (4) parents' presence on child's response, and (5) children's TV programs during treatment.

Subjects: 200 children, ages 2 to 5, who have not had any previous dental experience. The subjects cover a range of socioeconomic levels and there is an equal distribution of black and white children. Half of the population is caries free, and the other half requires treatment.

Methods: A longitudinal, repeated measures design is being used with the subjects receiving needed treatment and periodic exams every 6 months for 3 years. The children's response to dental visits will be measured by a combination of physiological variables (heartrate and BSR); behavioral variables (rating of cooperative behavior and clinical anxiety from videotapes of visits); and self-report measures (picture test and human figure drawing). All dental treatments will be provided by the principal investigator. A multivariate analysis will be done on the data to determine if significant effects related to maturation and dental experience occurred.

Findings: Children respond initially to the general situation, and with experience, learn to identify stressful procedures and respond selectively. Over a series of six visits, there is first an increasingly negative response which becomes more positive on the fourth or fifth visit. The most positive response occurs on the sixth visit. Response 6 months later has returned to a level comparable to the first visit.

Duration: May 1975-April 1978.

Cooperating group(s): National Institute of Dental Research, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

Social

37-FA-1 THE EFFECTS OF CROWDING ON THE BEHAVIOR OF CHILDREN

Investigator(s): Chalsa M. Loo, Ph.D., Assistant Professor, Merrill College, Department of Psychology, University of California, Santa Cruz, California 95064.

Purpose: To determine the effects of space on the social and affective behavior of children; and to determine the susceptibility of individual differences to spatial conditions.

Subjects: 72 normal, 5-year-old boys and girls. The children were divided into 12 groups: six far personal space groups and six close personal space groups. Each group consisted of three girls and three boys.

Methods: The first stage of the research consists of controlled experimental studies on the effects of spatial densities on the social and affective behavior of children. Several clusters of dependent variables were examined: (1) frequency and quality of social interactions, (2) activity model and level, (3) instability of activity, and (4) avoidance behaviors. Sex differences and personal space differences in response to crowding were assessed, as well as differential responses to crowding on teacher ratings of anxiety, hyperactivity, and behavior disturbance. Behavioral ratings were used for the

dependent variables, and a postexperimental interview was also given. The subjects were brought to the university research facility in small groups and invited to engage in free play in a specially built room equipped with one-way observation mirror and microphones. A repeated measures design was used in which children served as their own controls by undergoing both density conditions. Order effects were controlled by counterbalancing. The low density condition was 260.5 square feet, allowing 43.4 square feet per person. The high density condition was 130.8 square feet, allowing 21.8 square feet per person. Each density condition studied consisted of 54 minutes of free play in an unfurnished room. Trained research assistants sat behind the one-way mirror and observed and rated the children's behavior. Each child was interviewed separately after each density condition using prescribed questions to assess how the density conditions were comparatively experienced. A five-factor univariate analysis of variance with one repeated measure (density) using individual subjects as the unit of analysis was performed on the data. The five factors included density, personal space, sex, order, and group. In addition, a four-factor univariate analysis of variance with one repeated measure (density) was performed on the data using the group means as the unit of analysis. The four factors included density, personal space, sex, and order. In addition, a multivariate analysis of variance is being performed on the original factors and on other factors which emerged from the factor analysis and the univariate analysis of variance.

Findings: When comparing low and high density conditions for the factors of social interaction (aggression, helpful, etc.) and for extent of interaction, there was more aggression in the high density condition for boys, no effect for aggression on girls, fewer positive social overtures in the high density condition, no effect for social interaction, and opposite effects for the noninteraction variable. There was more solitary play in the low density condition and more onlooking in the high density condition. For the activity factors, there was more inactivity for girls in the high density condition, more inactivity for both sexes in the high density condition for first session effects, more sitting and running in the low density condition, more standing in the high density condition, no effect for lying, less walking for girls in the high density condition, and no effect for walking on boys. For the instability of activity factor, there were more interruptions for girls in the high density condition, no effect on interruptions for boys, more toy changes for boys in the high density condition, no effect on toy changes for girls, and a trend toward more non-toy behavior in the high density condition. For the avoidance variables, there were more escape behaviors in the high density condition, more facing out for boys in the high density condition, no effect for facing out on girls, and a trend toward more facing out for all children in the high density condition. Frequently occurring interactions for sex and density provided very strong evidence for the differential effects of space on boys and girls. Sex differences in the low density condition were found to intensify in the high density condition. It was found that density change (as a function of order effects) had differential effects on some variables. The second session intensified density differences for escape behavior, facing out, standing, and running. Prior experiences of a large room or present expectations of a large room apparently made the subsequent high density condition more stressful or restrictive. For other variables, the second session (or density change) reduced density effects, making density differences greater in the first session than in the second. This phenomenon held true for aggression and inactivity. Personal space proved to be an individual difference which was differentially affected by density for six variables and undifferentiating for the other 10 variables. In the high density condition, far personal space boys were found to be more aggressive than close personal space boys; far personal space children stood more in the high density condition than did close personal space children. In the first session, far personal space children were more inactive than close personal space children in the high density condition. These findings are consistent with the assumption that far personal space children would feel more restrained by a high

density condition than close personal space children. For two of the six variables for which personal space differences in response to a high density condition were found, the results were in a direction opposite from what was expected. In the high density condition, close personal space children ran more, were more frequently interrupted, and faced out more often than far personal space children. No personal space effects were found for helpful-sharing, walking, toy changes, non-toy behaviors, solitary play, onlooker, social interaction, lying, or sitting. Projects for 1976 involved (1) studying the effects of social density on behavior, and (2) studying the effects of spatial density on 10-year-old boys. The entire research grant covers a 3-year duration.
Duration: April 1975-March 1976.
Cooperating group(s): National Institute of Mental Health; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

37-FA-2 LONGITUDINAL STUDY OF THE SOCIALIZATION PROCESS

Investigator(s): Jarmila Kotásková, Ph.Dr., C.Sc., Institute of Psychology, Academy of Sciences CSSR, Purkynova 2, Prague, Czechoslovakia 11000.
Purpose: To determine the antecedents of children's internalization of social norms.
Subjects: 50 girls and boys from the city of Prague, ages 18 months, 3 years, 4.6 years, and 6 years; and a comparison group of Dutch children.
Methods: The main concentration of this study is on the development of social norms. The design involves the use of ratings and experiments in RTT, nAch, and cognition. The children will be tested with Cattell's 16 Personality Factor Questionnaire, Leary's ICL, Schaefer's PARI, Littman-Kasielke's Educational Attitudes, and Schutz's FIRO-B.
Findings: Correlations, factor analysis, and analysis of variance revealed consistencies in interactions, signal meaning of reinforcements (individual and age differences), and clusters of social-personal influences.
Duration: 1968-1977.

37-FA-3 RELATIONSHIP OF SETTINGS, ETHNICITY, SOCIOECONOMIC STATUS, AND SEX TO SOCIAL PARTICIPATION IN PLAY GROUPS OF YOUNG CHILDREN

Investigator(s): John R. Nevius, Jr., Ph.D., Associate Professor; Leona Foerster, Ed.D., Professor; Dorothy Filgo, M.A., Associate Professor; and Barbara Simmons, Ed.D., Assistant Professor, College of Education, Texas Tech University, Lubbock, Texas 79409.
Purpose: To determine some specific influences upon children's social participation when participation is defined as peer group involvement and leadership activity.
Subjects: 40 boys and girls, ages 4 to 5, who have been randomly chosen as to sex, ethnicity, and socioeconomic status.
Methods: Data were obtained by replicating Mildred Parten's time sampling procedures. Three raters were trained to correlation .82 levels of agreement. Thirty-five 1-minute samples of behavior were collected for each child, as children were involved in play activities. Peer group involvement was classified as unoccupied, solitary, onlooker, parallel, associative, organized, and supplementary types of activity. Leadership was classified as following, independent pursuit, following some and directing others, sharing leadership with another, and directing alone.
Duration: September 1975-October 1976.
Cooperating group(s): Slaton Independent School District, Slaton, Texas.
Publications: Information is available from the investigators.

37-FA-4 INTERGROUP RELATIONS IN FIELD SETTINGS

Investigator(s): Henri Tajfel, Ph.D., Professor; and Anthony M. Agathangelou, D.Phil., Research Associate, Department of Psychology, University of Bristol, Bristol, England BS8 1HH.

Purpose: To test a number of predictions following the intergroup theory outlined by Tajfel in *Scientific American*, 1970, 223(5), 96-102 and in *Journal of Experimental Social Psychology*, 1974, 10, 159-170 concerning strategies adopted by subjects following intergroup comparisons in awarding of *points* for in-group and out-group activity.

Subjects: Study 1: 16 boys, age 14; Study 2: 20 boys and girls, age 15; Study 3: 96 boys and girls, age 14; and Study 4: 48 boys, age 12. All subjects are normal secondary school students of very mixed ethnic composition.

Methods: The research involves analysis of variance designs and matched groups. Methods include semantic differential, matrices, participant observations, unobstrusive observations, and verbal reports. This was the first attempt to test in naturalistic conditions the intergroup theory outlined above.

Findings: Generally in line with predictions, children demonstrate in-group favoritism and bias and out-group discrimination on the basis of the initial assignment of group categories *alone*. Greater bias is shown by the high as opposed to the low status groups.

Duration: October 1976-October 1977.

Cooperating group(s): (1) Social Science Research Council. (2) A local education authority.

37-FA-5 SOCIAL BEHAVIOR OF COMMUNALLY-REARED CHILDREN

Investigator(s): Elizabeth A. Missakian, Ph.D., Research Associate, Synanon Foundation, Inc., Box 786, Marshall, California 94940.

Purpose: To examine the social behavior, specifically aggression at play, of children raised in the Synanon School.

Subjects: 34 children, ages 6 to 48 months. All children live in the Synanon School which is a 24-hour-a-day communal-rearing situation.

Methods: Children are observed daily and measures of aggression, submission, and several categories of social play are recorded. The unique features of this project involve the subject population, the long-term nature of the project, and the application of ethological tools to study these children. Children reared in Synanon represent one of the largest groupings of communally-reared children in the country.

Findings: Children ranging in age from 6 to 48 months arrange themselves in stable and linear dominance hierarchies. There are reduced sex differences in frequency of aggression and no gender differences in dominance position.

Duration: 1974-1979.

37-FA-6 CHILDREN'S ATTITUDES TOWARD THE ELDERLY

Investigator(s): Carol Seefeldt, Ph.D., Associate Professor, Department of Early Childhood/Elementary Education, College of Education, University of Maryland, College Park, Maryland 20742.

Purpose: To assess children's attitudes toward the elderly.

Subjects: 180 children, ages 3 to 11, randomly selected.

Methods: An attitude assessment instrument, the CATE, was designed to assess children's attitudes toward the elderly and consisted of a semantic differential, Piagetian questions, and open-ended questions. Chi-square, analysis of variance, and correlational techniques were used to analyze the data.
Findings: In general, children were found to have rather affective positive attitudes toward the elderly and expressed affection and liking for older persons. On the other hand, children of all ages seemed to hold stereotypic and negative attitudes of the elderly in the areas of physical considerations. They expressed views of the elderly as passive, sick, tired, inactive, and sad.
Duration: September 1975-July 1976.
Cooperating group(s): (1) American Association of Retired Persons. (2) ANDRUS Foundation.

37-FA-7 SOCIOMETRIC RATINGS AND SOCIAL INTERACTION AMONG THIRD GRADERS IN AN INTEGRATED SCHOOL DISTRICT

Investigator(s): Louise C. Singleton, M.A.; and Steven R. Asher, Ph.D., Department of Educational Psychology, University of Illinois, 210 Education, Urbana, Illinois 61801.
Purpose: To examine the nature of social interaction among third grade children who have been in integrated classrooms throughout their public school experience.
Subjects: 242 third graders from 11 elementary schools in a midwest school district. The sample included 101 white boys, 90 white girls, 21 black boys, and 30 black girls.
Methods: A roster-and-rating scale sociometric technique with two questions was used: play with and work with. Analyses of variance, omega-squared analyses, and correlations of sociometric ratings with achievement were reported. Behavioral observations using a time sampling technique were also reported. This was a longitudinal study. In April 1973 and in May 1976 the same sociometric data were collected.
Findings: The influence of race on sociometric choice, though significant, was small. The sex of the child accounted for 49 percent of the variance on play and 39 percent on work. In comparison, race accounted for only 1 percent of the variance on play and work. Observation data indicate more cross-race than cross-sex interaction. Most of the interactions were positive. The 1973 and 1976 data will be compared.
Duration: 1973-1976.
Publications: A paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, California, April 1976. Copies are available from the investigators.

37-FA-8 A STUDY OF PEER GROUP INVOLVEMENT AND SHIFTS IN PARENTAL CHILDREARING TECHNIQUES

Investigator(s): John R. Nevius, Jr., Ph.D., Associate Professor; and Myron L. Trang, Ph.D., College of Education, Texas Tech University, Lubbock, Texas 79409.
Purpose: To determine the relationship of parental childrearing techniques or practices to a child's peer group involvement.
Subjects: Approximately 30 children: all of the 2-year-old, 4-year-old, and kindergarten children enrolled in the Texas Tech University Child Development Laboratory; and approximately 50 to 60 parents.

Methods: Data on childrearing will be gathered from three instruments which have proven to contribute consistently significant information: (1) Martin Hoffman's Questionnaire to determine childrearing patterns with respect to power assertion, love withdrawal, and induction; (2) Diana Baumrind's Questionnaire to determine childrearing patterns with respect to authoritarian, authoritative, and permissive approaches; and (3) Kagan's Affective Sensitivity Scale to determine levels of interpersonal sensitivity, interpersonal competency, and empathy skills. Peer group involvement will be determined by Parten's time sampling procedures. Involvement will be scored related to participation (solitary, onlooker, isolate, parallel, associative, or cooperative) and leadership (following, independent pursuit, following some-directing others, sharing leadership with another, or directing alone). The data will be analyzed using correlation of peer group involvement with parental childrearing techniques and analysis of variance within groups and between groups on parental childrearing patterns and peer group involvement.
Duration: September 1976-August 1977.
Publications: Data will be available from the investigators.

37-FB-1 WHAT MAKES THE CHILD UNDERSTAND SEXUAL KNOWLEDGE?

Investigator(s): Claire Demaret-Wauters, Psychologist; Therese Jacobs, Psychologist; and Catherine Le Mayeur de Merpres, Psychologist, Institute of Family and Sexology Sciences, University of Louvain, Ladeuzeplein, 20, 3000 Leuven, Belgium.
Purpose: To determine the influence that a child's affective relations may have on his integration of sexual information.
Subjects: 36 children, ages 5 to 7, who were divided into two groups each composed of nine girls and nine boys. One group of children lived in an institution; the other group, with upper middle class families.
Methods: This research is the first part of a larger research program. Collection of data was completed by testing the children with Patte Noir, a test developed by L. Corman, to determine the children's integration of sexual knowledge in their affective domain. They were then given a test that consists of a series of standardized pictures together with questions designed to show their sexual knowledge (objective knowledge of their sexual identity, marriage, the couple, the family, their origin, birth, suckling, and the affective reactions contained in certain replies). Before using the test, the investigators elaborated it and used it in a preliminary study. The children were also asked questions about family identification.
Findings: A comparison of the results from this study and from a different study indicated that children living in institutions are fundamentally different from children brought up by their family. Results showed that the sexual knowledge of children living in institutions is very limited and inhibited in its expression, and these children's affections are badly integrated into their framework of life. Children living with a family have far larger knowledge which they are able to communicate without much reticence, and they are fully integrated into a well-balanced family framework. The results of this investigation led the researchers to develop the following hypothesis: the affective relations of a child have a specific influence on the integration of sexual knowledge.
Duration: October 1972-completed.

37-FB-2 SEX RCLES IN NURSERY SCHOOL

Investigator(s): Marie-louise Annerblom, B.A., Research Assistant, Department of Educational and Psychological Research, Malmö School of Education, Fack, S-200 45 Malmö 23, Sweden.
Purpose: To develop a communication with staff workers of a nursery school about sex roles and how to change them.
Subjects: Approximately 50 children, ages 2 to 7. The subjects have been divided into four groups by age: 2 to 3, 3 to 4, 5 to 6, and 6 to 7 years.
Methods: The major portion of the investigation will be centered around daily life at the institution. The interactive method of participant observations and dialogue will be used to collect the data.
Duration: September 1974-September 1976.
Cooperating group(s): Social Welfare Department.

37-FB-3 ATYPICAL SEX ROLE DEVELOPMENT IN CHILDREN

Investigator(s): Richard Green, M.D., Professor, Department of Psychiatry and Behavioral Science, School of Medicine, Health Sciences Center, State University of New York, Stony Brook, New York 11794.
Purpose: To explore early life experiences associated with the emergence of atypical sex role development and contrast these experiences with those of children whose development is typical; to document behavioral features of children with atypical sex role development and contrast this behavior with that of typical boys and girls; to explore physiological variables that may influence atypical sex role development; to explore strategies for effecting behavioral changes in children experiencing social hardship because of their markedly atypical behavior; and to follow children with atypical sex role development into adolescence and adulthood in order to correlate childhood behavior with subsequent sexuality.
Subjects: 40 feminine boys, ages 3 to 10; a sample of grade school girls who manifest masculinity; and a contrast group of girls whose behaviors fit more conventional definitions of femininity.
Methods: This project is a continuation and expansion of ongoing research which has been in effect for 10 years. The treatment given for boyhood femininity includes a group treatment on an outpatient basis with parent and child along with a token reinforcement strategy in the home. Family interaction is also studied through interviews and observations. A parent screening questionnaire is completed prior to the interview, which includes demographic data, frequency estimates regarding the child's gender typed behavior, parental attitudes toward the behavior, aspects of the marital relationship, and early parent-child contact. Physiological data collection includes electroencephalographic analysis and plasma testosterone hormone levels on the children. Psychological tests are utilized to show differences between the feminine boys and the contrast groups. The tests include the It Scale for Children, Draw-A-Person Test, Family Doll Fantasy Test, Toy Preference Test, and Parent and Activity Preference Procedure.
Duration: 1969-continuing.
Cooperating group(s): UCLA Department of Psychiatry.
Publications: Green, R. *Sexual identity conflict in children and adults.* New York: Basic Books, 1974; Baltimore: Penguin, 1975.

37-FC-1 EVALUATION OF A THERAPEUTIC COMMUNITY FOR ADOLESCENTS

Investigator(s): Robert Brook, Ed.D., Regional Director, Addiction Research Foundation, 414 Dufferin Avenue, London, Ontario, Canada; and P. C. Whitehead, Ph.D., University of Western Ontario, London, Ontario, Canada.
Purpose: To describe the psychosocial behavioral characteristics of adolescent amphetamine abusers focusing upon antecedent factors that contribute to drug abuse; and to evaluate the drug abusers' responses to treatment in a therapeutic community.
Subjects: 64 male and female drug abusing adolescents, mean age 19, who were followed up after a year of treatment.
Methods: The major question studied in this investigation was: Does length of time in treatment correlate with posttreatment prosocial adjustment? All subjects admitted to residence in the therapeutic community completed the following pretest data: a demographic information sheet, the Rokeach Value Survey (RVS), and the Minnesota Multiphasic Personality Inventory (MMPI). All 64 subjects admitted in 1972 were followed up the 10th month from the time they terminated treatment and were retested with the MMPI, RVS, and a questionnaire designed to reveal current drug use, employment or school status, and arrest records. The follow-up interviewer used face validity to the subjects' responses and at least one of the principal areas of adjustment was independently validated; e.g., parent, employer, or police were contacted to verify each subject's responses.
Duration: September 1970-December 1976.
Publications: Brook, R. and Whitehead, P. C. Psychosocial dysfunctions as precursors to amphetamine abuse among adolescents. *Addictive Diseases*, 1976, 2(3), 465-478.

37-FC-2 MODIFYING THE EATING HABITS AND BODY DIMENSIONS OF THREE OBESE ADOLESCENTS

Investigator(s): Thomas J. Coates, M.A., Research Assistant, Stanford Center for Research and Development in Teaching, Stanford University, Stanford, California 94305.
Purpose: To explore the efficacy of self-control procedures in helping obese adolescents change eating habits and reduce body weights to normal ranges.
Subjects: Three obese adolescent girls, age 16, who are 50 percent above ideal weight.
Methods: This study employs a single subject design: Two subjects receive active treatments, and one subject serves as a control. Data will include a self-report, a parent report, and naturalistic observations by nonparticipant observers. The research is unique in that for the first time precise data from a variety of measures will be provided on eating habit changes that occur with the introduction of self-control procedures. Statistical treatment will include analysis of intensive data by means of the integrated moving averages procedures and estimates of generalizability using the procedures developed by Cronbach.
Findings: Observations appear to have a high degree of generalizability. Eating habits appear to be changing with the introduction of self-control procedures.
Duration: March 1976-March 1977.
Cooperating group(s): (1) Stanford Boys Town Center for Youth Development. (2) Stanford Youth Clinic, Department of Pediatrics. (3) Stanford University School of Medicine.

37-FC-3 DRUG EDUCATION FOLLOW-UP: METHODOLOGICAL SCHEMA

Investigator(s): John Kaplan, LL.D., Professor, School of Law, Stanford University, P. O. Box G, Stanford, California 94305.

Purpose: To seek to identify the impact of school education on children's drug use.

Subjects: 1,229 students in five schools. The students, now in grade 6, will be followed in the classroom this year and next year.

Methods: Within each school, students have been assigned to one of four drug education approaches: basic (control), didactic, process, and confluent. The design allows for comparisons between districts, regular staff teachers vs. trained outside drug teaching specialists, and the several educational approaches. Curricula materials and testing instruments are the same as those developed, field tested, and validated during a past study. The testing instrument is a questionnaire, which is administered at the beginning and the end of the school year, and asks students to describe their drug use. In addition, a sample of eighth graders from a previously completed study has been recontacted and tested in order to assess stability of impact. The staff has been meeting with a small group of sixth grade parents at two schools who replied to an invitation to all parents to help design a drug education program which reflects the concern of the community.

Duration: October 1975-September 1978.

Publications: (1) Curricula materials (The D-E-C-I-D-E Curriculum; Chalk Talks on Drug Education) are available at cost from: Programs in Drugs, Crime and Community Studies, P. O. Box G, Stanford, California 94305. (2) *Drug education: Results and recommendations.* Lexington Books, 1976.

37-FC-4 LIFE STRESS AND ADOLESCENT DRUG DEPENDENCE

Investigator(s): David F. Duncan, Dr.P.H., Research Statistician, School of Public Health, Health Science Center, University of Texas, P. O. Box 20186, Houston, Texas 77025.

Purpose: To examine the relationship between life stress and the onset of drug abuse in adolescents who have become drug dependent.

Subjects: 31 drug dependent adolescents (17 males, 14 females), ages 14 to 21, applying for admission to a halfway house providing posthospital care for young drug abusers. (20 subjects are white; 7, Chicano; and 4, black).

Methods: A retrospective study was conducted in which each subject was asked when he/she first began using illicit drugs, what the circumstances were, etc. Subjects were then asked to complete a Life Event Record (Coddington, 1972) noting all significant life change events that had occurred during the year preceding their first illicit drug use. The scores obtained were compared to standard normative data (Coddington, 1972) by t-test and chi-square.

Findings: Mean score for the subjects was 360.9 with a median score of 373. Normal population scores showed means of 195.66 and 226.8. The sample mean was significantly different from the norm at the .005 level by t-test showing a far more stressful and unsettled life history than the norm preceding their first drug abuse.

Duration: August 1974-January 1975.

Cooperating group(s): Reality Island, Inc.

37-FD-1 DEVELOPMENT OF NATIONAL IDENTITY IN PRESCHOOL CHILDREN

Investigator(s): Sandra Kenyon Schwartz, Ph.D., Political Science Department, Hickman Hall, Rutgers, the State University of New Jersey, New Brunswick, New Jersey 08903.
Purpose: To compare the development of national identity with the development of sex identity among preschool children.
Subjects: 96 boys and girls, ages 3 to 6, chosen from six nursery schools, day care centers, and Head Start programs.
Methods: The basic hypothesis of this research is that children's national identity follows the same sort of cognitive developmental sequence as does sexual identity; but, because it is more remote, abstract, and complex, national identity develops more slowly and later than sexual identity. Data will be collected through taped interviews using pictures administered by graduate students in school populations from the middle and lower classes. This research follows the work of Piaget on cognitive development and of Kohlberg on sexual identity. The interview schedule is semistructured and involves questions followed by probes. It tests for recognition of knowledge about and affect for a series of national symbols (e.g., American flag, George Washington). Parallel questions on sexual identity are also included in the interview. A substantial section of the interview probes the child's understanding of America (as a place, a people, a political unit). Independent variables are age, level of development of sexual identity, and class.
Duration: Spring 1975-Fall 1976.

37-FD-2 PRODUCING EQUAL STATUS INTERACTION BETWEEN SCHOOL AGE BOYS AND GIRLS

Investigator(s): Marlaine Lockheed, Ph.D., Research Sociologist, Educational Testing Service, Princeton, New Jersey 08540.
Purpose: To examine the relationship between sex specific expectations for competence and behavior in mixed sex groups.
Subjects: 112 girls and boys in fourth and fifth grades, who were homogeneous as to social class and cognitive style.
Methods: The experimental treatment involved assigning high competence to girls in the presence of boys. Girls learned an electronics task and taught it to boys. Subsequently, unacquainted groups of two boys and two girls worked at a decision making task and were videotaped. Their behavior was coded according to a modified Bales category system. Control subjects learned the electronics task in single sex groups and then engaged in the decision making task with other control subjects. All task groups were composed of strangers.
Findings: Control groups were, not as predicted, equal status; the probability of emerging as a leader was not different for males than for females. Experimental groups in which the intervention *took* for the boys were female dominated. Experimental groups in which the boys observed a girl who refused to display competence were male dominated. No experimental effect was observed on the girls.
Duration: July 1974-June 1976.
Cooperating group(s): East Windsor Regional School District.
Publications: A paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, April 1976: Lockheed, M. and Harris, A. Producing equal status interaction between school-age boys and girls

37-FD-3 STATUS ATTAINMENT VARIABLES PERTAINING TO INCOME AND POLITICAL INFLUENCE AMONG RURAL PEOPLE

Investigator(s): Archibald Haller, Ph.D., Professor; Mary Olson, Research Assistant; and Ken Spenner, Research Assistant, Department of Rural Sociology, University of Wisconsin, 640 W.A.R.F. Building, 610 Walnut Street, Madison, Wisconsin 53706.
Purpose: To develop and standardize questionnaire instruments by which to measure differences in youths' aspirations for, and their *significant others'* expectations for, their future levels of income and political influence.
Subjects: 300 high school juniors, their parents, and 150 significant others (the control group). Significant others are persons who serve as a point of comparison for the student, define the student's self, or communicate information to the student.
Methods: The overall objective of the research is to develop, to the extent possible, valid, reliable, and practicable indicators, suitable for use in survey research, of five as yet unmeasured variables implicated in the status attainment process: (1) income aspiration levels of youth; (2) income expectation levels of those who determine the income aspirations of youth; (3) political influence (the level of the political system at which a person exercises the political system); (4) political influence aspiration levels of youth; and (5) political influence expectation levels of those who determine the political influence aspirations of youth. Data were collected by administering questionnaires to the entire group of subjects. The questionnaire had questions to ascertain the youth's education, occupational income, and political participation aspirations. A section was also included to determine the youth's political knowledge. Parental data were collected through mailed questionnaires; significant others were contacted by phone.
Duration: January 1975-June 1978.
Cooperating group(s): (1) Wisconsin Survey Research Center. (2) Wisconsin College of Agricultural and Life Sciences.
Publications: Results for research use are available from Dr. Haller.

37-FE-1 CHILDREN'S FILM MAKING

Investigator(s): Brian Sutton-Smith, Ph.D., Professor, Department of Psychology, Teachers College, Columbia University, New York, New York 10027.
Purpose: To study children's film making.
Subjects: Children, ages 9 to 14, from public school groups and volunteers for a street workshop.
Methods: The research strategy of this investigation will consist of (1) pre-post psychological testing for intelligence, creativity, embedded figures, personality, and locus of control, and pre-post interviews; (2) observational records of phases of film making with videotape and with coded observational procedures; (3) experimental procedures in which film procedures of varying kinds are contrasted; and (4) content anaiysis of cinematic techniques and narrative structures used by the children.
Duration: September 1974-June 1977.
Cooperating group(s): Young Filmmakers of New York.

37-FE-2 CHILDREN'S COMPREHENSION OF TELEVISION INFORMATION

Investigator(s): Bernard Z. Friedlander, Ph.D., Professor; and Harriet S. Wetstone, M.S., Lecturer, Department of Psychology, University of Hartford, 200 Bloomfield Avenue, West Hartford, Connecticut 06117.
Purpose: To assess children's attention to and comprehension of cognitive and affective information from instructional and entertainment television programs.
Subjects: Children from preschool through high school.
Methods: Multiple measures of children's attention to and comprehension of cognitive and affective program content are employed in ways that allow statistical and content analysis of audience understanding of program content. Orthodox research methods allow investigation of specific program and audience variables such as modes of presentation, redundancy, visual/auditory display, age, sex, socioeconomic status, and scholastic achievement.
Findings: Many informational-instructional programs are found to be extremely ineffective in communication information content to target audiences. Age level and levels of scholastic achievement are major predictors of comprehension performance. Attention and comprehension often vary independently. Many media conventions are of very dubious value in communicating both affective and cognitive content, while some are suprisingly effective.
Duration: Fall 1972-continuing.

37-FE-3 AN INVESTIGATION OF THE TELEVISION VIEWING HABITS OF STUDENTS IN GRADES 3 THROUGH 8

Investigator(s): Robert W. Wood, Ed.D., Professor; and Charles E. Eicher, Ed.D., Associate Professor, Department of Elementary Education, School of Education, University of South Dakota, Vermillion, South Dakota 57069.
Purpose: To provide knowledge of the television viewing habits of children in grades 3 to 8 in the schools of Vermillion, South Dakota.
Subjects: 422 girls and boys, ages 7 to 15, in grades 3 to 8.
Methods: The Television Viewing Questionnaire, developed by the investigators, was used to gather the data for this investigation. The investigators arbitrarily selected the types of questions to be included. The survey focused on general demographic information dealing with grade level, age, sex, and school attended by the respondents. The children were asked questions about the number of TV sets in their home, if they had their own TV set, and if each had a TV set in his/her bedroom. The children listed the names of their 10 favorite TV shows in rank order. They also responded to whether or not they watched TV commercials and the reasons they viewed TV. Finally, the children kept track of the number of hours that they viewed TV each day for 14 consecutive days.
Findings: The entire school population had an average of 1.955 TV sets per household. A majority of respondents did not have a TV set in their room and did not have a personal TV set. Respondents (N = 394) watched TV for entertainment; 227 watched to keep them company at home; 190 watched to gain knowledge or information; 85 viewed because parents had the set turned on; and only 5 stated that they did not watch TV.
Duration: November 1975-April 1976.

SPECIAL GROUPS OF CHILDREN

Physically Handicapped

37-GA-1 EARLY IDENTIFICATION OF HANDICAPPED CHILDREN

Investigator(s): P. David Kurtz, Ph.D., Assistant Professor; and Karen Laub, Ph.D., Assistant Professor, Department of Individual and Family Studies, Pennsylvania State University, University Park, Pennsylvania 16802.

Purpose: To evaluate procedures for finding and screening handicapped preschool children in rural areas.

Subjects: 600 preschool children, ages 1 to 6, from four rural townships in Pennsylvania.

Methods: The design of the study involves the comparison of two main variables: (1) people from outside the community vs. people from inside the community, and (2) advertising for all children vs. looking only for handicapped children. Four types of child finding conditions are involved. Condition 1, in which a person inside the community looks for all children, involves the active support of community leaders and participation of community volunteers to assist in organizing, contacting parents, and screening children. The project is geared to screening all children, ages 1 to 5. No emphasis will be placed on handicapped children. Condition 2, in which a person from outside the community looks for all children, emphasizes screening all children. The child find-screening process, however, is conducted by outside professionals with minimal emphasis on community support and assistance. Professionals will organize, contact parents, and conduct the screen. Condition 3, in which a person from inside the community looks only for handicapped children, is like Condition 1. Support and assistance of community leaders and volunteers will be sought. Rather than advertising a general screen for all children, the project will advertise specifically for handicapped preschoolers. Condition 4, in which a person from outside the community looks only for handicapped children, is similar to Condition 2. Professionals will organize and conduct the child find and screen effort with little, if any, support from community persons. The focus will be on advertising for handicapped children only. A variable, to be examined in each community or condition, is the communication mechanism. A sequence of three communication methods will be used: first, letters to parents plus community advertising (flyers, announcements, etc.); second, phone calls to parents; and finally, if necessary, home visits.

Duration: September 1975-July 1976.

Cooperating group(s): Bureau of Education for Handicapped, Office of Education, U. S. Department of Health, Education, and Welfare.

Publications: Based on the findings, an early identification manual will be produced as part of the Bureau of Education for Handicapped grant in Spring 1977.

37-GB-1 RECOGNITION OF CYSTIC FIBROSIS HETEROZYGOUS STATE

Investigator(s): Gordon E. Gibbs, Ph.D., M.D., Research Professor, Department of Pediatrics, College of Medicine, University of Nebraska, 42nd and Dewey Avenue, Omaha, Nebraska 68105.

Purpose: To develop a method suitable to determine the cystic fibrosis heterozygous state.

Subjects: 200 parents of cystic fibrosis children; 150 children with cystic fibrosis; and 100 control children.

Methods: Methods previously proposed by others are being checked: (1) cilia tests, (2) isoelectric focusing chromatography, (3) inhibition of sodium transport in rat parotid gland, and (4) lysosomal enzyme liberation from activated granulocytes.

Findings: The investigator has been unable so far to reproduce methods 1, 2, and 3. Work on method 4 has just been initiated.

Duration: July 1975-June 1977.

Cooperating group(s): (1) American Lung Association of Nebraska. (2) Nebraska State Health Department.

Publications: Reprints of the research are available from the investigator.

37-GC-1 HYPOPITUITARY DWARFISM: PSYCHOLOGICAL PROBLEMS

Investigator(s): Hino F. L. Meyer-Bahlburg, Ph.D., Research Associate Professor of Psychology in Psychiatry and Pediatrics, School of Medicine, State University of New York, Children's Hospital of Buffalo, 219 Bryant Street, Buffalo, New York 14222.

Purpose: To investigate the effects of hormone deficiency on psychosocial and psychosexual development in adolescence and young adulthood.

Subjects: 11 male and female patients, ages 16 to 38, who have had hypopituitarism since early childhood.

Methods: Patients were admitted to the Clinical Research Center for systematic endocrine and psychological studies. Degree of pubertal maturation was assessed by Tanner standards. Psychological examination involved systematic half-structured interviews with the patient, and, if available, the patient's mother. Testing instruments included the Guilford-Zimmerman Temperament Survey, the Cornell Index, the Vineland Social Maturity Scale, Draw-A-Person Test, and the Wechsler Intelligence Scales. The interview covered reaction to dwarfism and treatment, family relations, social relations, gender role behavior and gender identity, sexual orientation, sexual activities, school performance, and career planning. Interviews were taped (duration: 3 to 5 hours per interview) and rated from the tape by two independent raters according to previously established rating categories. Data are described for the total sample. Selected data will be related to the endocrine and growth status. Psychosexual development is compared with sexual maturity and treatment history.

Findings: The results indicate an impairment of psychosocial and, especially, psychosexual functioning.

Duration: June 1973-December 1976.

Cooperating group(s): Human Growth Foundation of Western New York.

37-GC-2 HYPOPITUITARY DWARFISM: INTELLIGENCE

Investigator(s): Heino F. L. Meyer-Bahlburg, Ph.D., Research Associate Professor of Psychology in Psychiatry and Pediatrics, School of Medicine, State University of New York, Children's Hospital of Buffalo, 219 Bryant Street, Buffalo, New York 14222.
Purpose: To test if growth hormone deficiency since early childhood impairs brain development and, thereby, intelligence.
Subjects: 29 male and female patients, ages 6 to 22, who have had hypopituitarism since early childhood.
Methods: All patients were tested with the Wechsler Intelligence Scales; subsamples, with Thurstone's Primary Mental Abilities Test and the Benton Visual Retention Test. Socioeconomic level was classified by the Hollingshead Index. On the basis of extensive endocrine examinations, the patients were classified as having isolated growth hormone deficiency or multiple hormone deficiencies. Both groups were compared within and across socioeconomic level. IQ data were related to hormone deficiencies, socioeconomic level, height, and other medical variables using standard parametric and nonparametric statistical analyses.
Findings: There was no effect of growth hormone deficiency *per se* but of diagnostic subcategories, and, of course, socioeconomic level.
Duration: January 1975-December 1976.
Cooperating group(s): Human Growth Foundation of Western New York.

37-GD-1 EPIDEMIOLOGIC STUDY ON CONGENITAL MALFORMATION AND MALIGNANT NEOPLASMA

Investigator(s): Kunio Aoki, M.D., Chief, Department of Epidemiology, Research Institute, Aichi Cancer Center, Chikusa-ku, Nagoya, Japan.
Purpose: To study host and environmental factors of congenital malformation (CM) and malignant neoplasma (MN).
Subjects: 41,028 babies born in Nagoya in 1965; 3,725 pregnant women and their babies to be born; and children who have died from CM and MN in Japan from 1955 to 1973.
Methods: The research design of this study involves a 1-year follow-up study and a 5-year follow-up study of the babies. Birth and death certificates of the babies will be collated, and their vital statistics will be analyzed.
Findings: CM in children is closely associated with socioenvironmental background but MN in childhood is not. The relationship between CM and MN in childhood is also not clear after the age of 1 year.
Duration: April 1972-December 1976.

37-GD-2 COLLABORATIVE PERINATAL PROJECT

Investigator(s): Karin B. Nelson, M.D., Child Neurologist, Developmental Neurology Branch, National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Bethesda, Maryland 20014.
Purpose: To determine the causes of childhood neurological disabilities.
Subjects: 58,000 pregnant women, followed at 12 hospitals. Children of these pregnancies are followed prenatally to ages 7 or 8.

Methods: This study has been designed to examine the interaction of certain characteristics of the labor, delivery, and neonatal periods of children with moderate or severe cerebral palsy and severe mental retardation (IQ less than 50). These handicapped children will be compared to a control group to determine differences. This Collaborative Project, an enormous, multidisciplinary, multiphasic study financed by the National Institutes of Health, is being carried out over 15 years. It will be the subject of 10 monographs to be published in 1977 or 1978.
Duration: 1959-1977.
Cooperating group(s): National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.
Publications: Information is available from the investigator.

37-GD-3 SPINA BIFIDA AND ANENCEPHALY RECURRENCE RISK

Investigator(s): Dwight T. Janerich, D.D.S., M.P.H., Director, Genetic Oncology, Cancer Control Bureau, New York State Health Department, ESP Tower Building, Albany, New York 12237.
Purpose: To assess the risk of recurrence of the birth defects, anencephaly and spina bifida, in families that have one affected child; and to examine occurrence patterns in special situations; e.g., in twins and half-siblings (children with one parent in common).
Subjects: Approximately 5,000 families in Upstate New York, with children born from 1955 to 1975 with anencephaly or spina bifida.
Methods: Vital records (birth, fetal death, death, marriage, and divorce) were searched to establish family data which were used to assess the risk of recurrence of the defects in subsequent siblings. In addition, 208 mothers of affected children were interviewed by telephone.
Findings: Recurrence among co-twins is higher than among full siblings, and recurrence among half-siblings is lower than full siblings.
Duration: March 1974-August 1976.
Cooperating group(s): National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.
Publications: A paper presented at the Ninth Annual Meeting, Society for Epidemiological Research, Toronto, Ontario, Canada, June 1976: Janerich, D. T. Genetics of anencephaly and spina bifida during non-epidemic periods.

37-GE-1 FIELD EVALUATION OF THE AUTO-COM, AN AUTO-MONITORING COMMUNICATION BOARD

Investigator(s): Gregg C. Vanderheiden, M.S., Director; and Deberah Harris-Vanderheiden, M.S.Ed., Area Coordinator, Trace Research and Development Center for the Severely Communicatively Handicapped, University of Wisconsin, 922 ERB, 1500 Johnson Drive, Madison, Wisconsin 53706.
Purpose: To evaluate the effect of the Auto-Com upon the educational and communication skill progress and upon social development of nonvocal physically handicapped children.
Subjects: Nine nonvocal, nonambulatory, cerebral palsied children and adolescents, ages 6 to 20. The sample is made up of three males and six females.

Methods: This was an exploratory study of the children's use of the Auto-Com in the classroom and home environment. A case study approach was used and there were no between group comparisons made in a formal way. Data were collected by (1) pre- and posttest assessment, (2) tracking each child's use of the aid, (3) information returned by parents and teachers, and (4) research team observations.
Findings: The Auto-Com was found to have a major beneficial effect upon the students' educational progress, their productive educational time, communication skills, personal development, motivation, and independence.
Duration: September 1973-completed.
Cooperating group(s): (1) National Science Foundation. (2) Division of Innovation and Development, Bureau of Education for Handicapped, Office of Education, U. S. Department of Health, Education, and Welfare.
Publications: Information is available from the investigators.

37-GE-2 TACTILE PERCEPTION OF SPEECH

Investigator(s): Sally Rogow, Ed.D., Associate Professor, Department of Special Education, University of British Columbia, Scarfe Annex, #1, Vancouver, B. C., Canada V6T 1W5.
Purpose: To help develop techniques of speech perception for blind children who also have hearing impairments and/or mental retardation.
Subjects: Four girls and two boys, ages 6 to 20.
Methods: In this investigation the Tadoma Method of Speech Reading is used with the child. The child is (1) familiarized with lip shape for vowel and consonant production, voicing characteristics, contrasts of voiced and voiceless sounds, and stress and rhythmicality; (2) taught the articulatory features of English phonemes, so he forms notions of sound production and sound perception simultaneously; (3) encouraged to imitate sounds he perceives; (4) encouraged to guess at sounds; and (5) encouraged to use the Tadoma Method with persons other than the teacher. After the sounds are correctly perceived, consonants and vowels are combined into syllables and then into words. Care is being taken to develop the concept that the child is *feeling* speech. The tests used are discrimination tests of high frequency distinctive features: place of articulation, voicing characteristic, duration of sound, nasality, and aspiration.
Findings: Results indicate that consonant perception is more easily achieved. Phonemes that involve lip movements and voice are most easily perceived.
Duration: October 1975-June 1977.

37-GE-3 DEVELOPING FAMILY BY FAMILY PLANS FOR PARENTS OF DEAF-BLIND CHILDREN

Investigator(s): Edwin K. Hammer, Ph.D.; Carolyn Torrie, M.S.W.; and Reva Carter, M.S.W., South Central Regional Center for Deaf-Blind Children, University of Texas, 1966 Inwood Road, Dallas, Texas 75235.
Purpose: To systematically assess and program parent services through a variety of preschool educational programs for deaf-blind children; and to evaluate levels of goal attainment within each program to ascertain the effectiveness of delivery systems.
Subjects: Approximately 400 parents of deaf-blind children in Iowa, Missouri, Oklahoma, Arkansas, and Louisiana.

Methods: The design of this investigation involves a social casework approach, participant evaluation, and the Goal Attainment Scale for weighted scores of effectiveness collected for each program (by participants and providers). A unique feature of the project includes types of parent activities that are effective; i.e., parents of residentially institutionalized children, parents of children in day school programs, parents of children in public school special programs, and parents of children in no program.
Findings: Processes have been established to develop parent involvement, professional involvement, and conflict resolution. Types of parent groups and delivery systems have been identified.
Duration: June 1972-continuing.
Cooperating group(s): (1) State departments of special education. (2) State residential institutions for mentally retarded with programs for deaf-blind children. (3) State-wide parent groups for deaf-blind children. (4) University personnel.
Publications: (1) Paper presented at the International Seminar on Deaf-Blind, Shrewsbury, England, July 1974: Hammer, Edwin K. Psychological assessment of the deaf-blind child: The synthesis of assessment and educational services. (2) Paper presented at the 1980 Is Now Workshop, John Tracy Clinic, Los Angeles, California, May 1974: Hammer, Edwin K. A time to think: Future needs of deaf-blind children. (3) Paper presented at the Regional Advisory Board Meeting, Dallas, Texas, June 1973: Torrie, Carolyn C. A preliminary report on parent observations and needs as they relate to programs for deaf-blind children.

37-GE-4 ACCOUNTABLE RE-ENTRY MODEL

Investigator(s): Gene England, Ph.D., Project Director; Bruce P. Ryan, Ph.D., Research Associate; and Burl Gray, Ph.D., Research Associate, Behavioral Sciences Institute, 72 Fern Canyon Road, Carmel, California 93921.
Purpose: To develop and disseminate a replicable delivery system to enable handicapped children to re-enter regular classrooms and succeed; and to assist parents and teachers in accelerating the process.
Subjects: 20 children, ages 3 to 8, with learning disabilities including mild mental retardation, language deficiency, hearing loss, emotional disturbance, organic impairment, etc.
Methods: High precision programmatic instructional procedures will be administered which are accountable for pupil response rates, accuracy rates, and variability. Programs will be developed to train additional teachers to maintain optimum performance specifications and accountability for pupils, teachers, and programs. A replicable model will be developed that yields optimal child progress and lowers costs through utilization of aides, parents, and volunteers.
Findings: The basic model validates in Carmel in 1975; three replication sites in Antioch, Visalia, and Whittier schools validate in 1976; 10 to 30 new sites will be evaluated in 1977.
Duration: July 1974-June 1977.

37-GF-1 PARENTAL REACTIONS TO THE BIRTH OF A CHILD WHO MAY BE DEVELOPMENTALLY DISABLED

Investigator(s): Susan Waisbren, M.A., Graduate Student, Psychology Clinic, University of California, 2205 Tolman Hall, Berkeley, California 94720.
Purpose: To examine the impact on parents of the birth of children who may be developmentally disabled.

Subjects: 40 parent couples whose child is developmentally disabled and is less than a year old; and 40 parent couples whose child is nonhandicapped and is less than a year old.
Methods: The major questions examined in this study are: What are the initial responsibilities, social encounters, and emotional experiences confronting these parents that differentiate them from parents of nonhandicapped children? and What formal and informal social supports do parents utilize in their adjustment to the diagnosis? An interview and questionnaire will be administered to the father and mother separately. The interview is open-ended and focuses on events surrounding the birth of the baby, visits to the doctor, and use of social supports. The questionnaire consists of fixed choice items. Analyses will be aimed at making two comparisons: between parents of retarded children and parents of nonhandicapped children; and differences between mothers and fathers. Personal adjustment, family relationships, and use of informal and formal social supports will be analyzed. A comparative study with 80 or more couples will be completed in Denmark from 1976 to 1977.
Duration: January 1976-December 1977.
Cooperating group(s): (1) American Scandinavian Foundation. (2) Social Science Research Council.
Publications: Information is available from the investigator.

37-GF-2 EMPLOYMENT EXPERIENCES OF HANDICAPPED SCHOOL LEAVERS

Investigator(s): National Children's Bureau, 8 Wakley Street, Islington, London, England EC1V 7QE. Address correspondence to: Gillian Pugh, Senior Information Officer, National Children's Bureau.
Purpose: To study the educational needs of handicapped children and to examine employment experiences of handicapped children.
Subjects: 400 handicapped children, ages 16 and 18.
Methods: This is a 2-year study and the subjects have been drawn from the National Child Development Study (see Study 37-BA-3 in this bulletin). The study includes those ascertained as physically and mentally handicapped as well as some of those who, while not having received special education, would have benefited from it in the opinion of their teachers. The study is looking at reasons for success as well as for failure to get or keep a satisfying job, and is also examining the effect of factors such as further education, training, family circumstances and support, and the use of and availability of other services. Information on the educational experiences and the developmental environmental characteristics of the group has already been collected at birth, 7, 11, and 16 years. The data are being analyzed and additional information will be gained from structured interviews with the young people and their families.
Duration: 1975-1977.
Cooperating group(s): Department of Education and Science.

37-GF-3 DEVELOPMENTAL INSTRUCTION IN MANUAL COMMUNICATION

Investigator(s): Rod J. Brawley, M.A., Project Coordinator, California School for the Deaf, 3044 Horace Street, Riverside, California 92506.
Purpose: To develop and evaluate sound and color films designed to assist parents of young deaf children in the acquisition of manual communication skills in their homes.
Subjects: 52 parents of severely hard of hearing or deaf children, ages 3 to 8. All parents either had ve limited or no skill using manual communication with their children.

Methods: Products developed were 21 films to be viewed on a rear screen projector with freeze action and instant replay functions, and two media guides for photographic reillustration of the film content. Volunteer participants were pretested in their homes in terms of current expressive and receptive manual communication skills. The control and experimental groups were balanced in terms of these scores. The experimental group viewed the films; the control group did not. Posttests were administered and recorded on videotape for evaluation. The media guides were not given to parents until after evaluation. The Whitney Mann U-test was used to determine the level of significance.
Findings: The films and rear screen projector are significant in instructing parents in the use of manual communication.
Duration: February 1974-June 1976.
Cooperating group(s): USEA Title IV C.

Mentally Retarded

37-HB-1 LEAD AND HYPERACTIVITY

Investigator(s): Oliver J. David, M.D., Director, Child Behavior Research Unit, Downstate Medical Center, State University of New York, Box 1195, 451 Clarkson Avenue, Brooklyn, New York 11203.
Purpose: To ascertain the significance of increased but nontoxic (by today's standards) lead level and conditions of hyperkinesis, learning disabilities, and borderline mental retardation.
Subjects: 180 to 200 hyperactive children, ages 4 to 12, with lead levels above normal but below toxic, with no severe neurological or psychiatric dysfunction. The subjects are predominantly male and have been described as hyperactive by parents, teachers, and physicians. Two control groups: a group of hyperactive children not actively medicated, and a group chosen from a general pediatric population.
Methods: This investigation involves categorizing hyperactive children by etiology and evaluating lead levels within these categories. Children who have raised lead levels are assigned randomly to a chelating regimen (penicillamine-PCA, or calcium disodium edetate-ETA) or a nonchelating regimen (methylphenidate-MTH, or placebo-PL), and these treatment regimens are compared. Data are being collected that will allow for the evaluation of (1) the value of a PCA provocation test for leadedness in children; (2) the utility of a lead exposure questionnaire in identifying the source of lead in children with elevated levels; and (3) the differences between leaded and nonleaded children in neurological, psychiatric, and psychological function as well as a clinical response to MTH treatment. Medical tests include a provoked urine test, a blood test, CBC, and SMA-12. A measure of socioeconomic status will be made by the Hollingshead/Redlich Scale. Psychological tests will be conducted using the Wechsler Intelligence Scale for Children or the Wechsler Primary and Preschool Scale of Intelligence, Bender Visual Motor Gestalt Test for Children, Wide Range Achievement Test, Frostig Developmental Test of Visual Perception (color-word), and Vineland Social Maturity Scale. Behavioral measures will be assessed on Conners' Teacher Rating Scale and Parent Symptom Questionnaire, Werry's Hyperactivity List, and Early Clinical Drug Evaluation Unit's Clinical Global Impressions Scale, Physical and Neurological Examination for Soft Signs, and Treatment Emergent Symptom Scale. Pre- and posttest scores will be compared after a 3- to 4-month treatment period.

Findings: A significant improvement was found in children treated with chelating agents and methylphenidate. The results are not yet definitive but tend to indicate that lead at levels not now considered dangerous may be a cause of hyperactivity.
Duration: July 1973-December 1976.
Cooperating group(s): Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.
Publications: (1) David, O. J.; Hoffman, S. P.; Clark, J.; and Sverd, J. Lead and hyperactivity: Behavioral response to chelation in hyperactivity. A pilot study. *American Journal of Psychiatry* (in press). (2) David, O. J.; Hoffman, S. P.; Svred, J. The role of lead in hyperactivity. *Psychopharmacology Bulletin*, April 1976, 12(2), 11-12. (3) David, O. J.; Clark, J.; and Voeller, K. Lead and hyperactivity. *The Lancet*, 1972, II, 900-903.

37-HC-1 GENDER-SPECIFIC DIFFERENCES IN DISRUPTIVE SOCIAL BEHAVIOR IN MORE SEVERELY RETARDED INSTITUTIONALIZED INDIVIDUALS

Investigator(s): Earl E. Balthazar, Ph.D., Director; and J. L. Phillips, M.A., Research Analyst, Behavioral Sciences Research, Central Wisconsin Colony and Training School, 317 Knutson Drive, Madison, Wisconsin 53704.
Purpose: To examine the differential occurrence of disruptive social behavior as an *immature* and a *masculine* behavior.
Subjects: 42 male and 35 female mentally retarded residents with median C.A., 14.6 years; median M.A., 16.4 months; and median S.A., 23.8 months.
Methods: The design of this study involves direct observation in a ward setting using selected scales from the Balthazar Scales of Adaptive Behavior II.
Findings: Interplay between physiological predisposition and social experience was indicated. Disruptive behavior declined in likelihood with increasing C.A., and within each age range males were more likely than females to exhibit the behavior. Associations between disruptive behavior and several adjustment indicators for females, and between disruptive behavior and various biosocial variables for males, are consistent with the idea that females inhibit aggressive behavior. Below an M.A. of 20 months, disruptive social behavior appeared randomly distributed with respect to M.A. for both sexes. A divergence occurred at an M.A. of about 20 months with *all but one* male and *none* of the females beyond that point exhibiting the behavior. An M.A. of 20 months coincides with the C.A. when object-discriminating abilities normally appear, but is *younger* than the age gender-differentiated behavior is generally reported.
Duration: November 1975-February 1976.
Publications: A complete report is available from Dr. Balthazar.

37-HC-2 SOCIAL COMPATABILITY IN MORE SEVERELY RETARDED, INSTITUTIONALIZED INDIVIDUALS: AN INDEX OF SOCIALLY AMBIVALENT BEHAVIOR

Investigator(s): Earl E. Balthazar, Ph.D., Director; and J. L. Phillips, M.A., Research Analyst, Behavioral Sciences Research, Central Wisconsin Colony and Training School, 317 Knutson Drive, Madison, Wisconsin 53704.
Purpose: To measure the extent to which an individual's behavior interferes with the formation and maintenance of social relationships.
Subjects: 77 ambulatory severely and profoundly retarded residents, ages 6 to 57 (median 14.6); M.A., 6 to 63 months (median 16.4); and S.A., 9 to 85 months (median 23.8).

Methods: The design of this study involves direct observation in a ward setting using selected scales from the Balthazar Scales of Adaptive Behavior II.
Findings: The Index of Socially Ambivalent Behavior is negatively related to age, length of institutionalization, use of medication, and S.A. It is not related to sex, medical diagnosis, or M.A. It is positively related to staff reports of social isolation and inappropriate interpersonal behavior. It is not related to aggressiveness, behavior problems, or hyperactivity. Individuals with passive social ambivalence had the lowest frequencies of noncommunicative social behavior and of nonfunctional or inarticulate verbalization, and and the greatest use of meaningful verbalization. Individuals in the intermediate category engaged in predominantly preverbal social behavior, and used more social vocalization or gestural communication and engaged more frequently in general exploratory and recreational behavior. Active social ambivalent individuals do not use their skills consistently and exhibited greater frequencies of rudimentary social behavior.
Duration: November 1975-February 1976.
Publications: A complete report is available from Dr. Balthazar.

37-HC-3 CLINICAL INVESTIGATIONS OF SOCIAL DEVELOPMENT OF THE SEVERELY AND PROFOUNDLY RETARDED

Investigator(s): Garry L. Martin, Ph.D., Associate Professor of Psychology, St. Paul's College, University of Manitoba, 430 Dysart Road, Winnipeg, Manitoba, Canada R3T 2M6; and Glen H. Lowther, Ch.B., Medical Superintendent, Manitoba School for the Retarded, Winnipeg, Manitoba, Canada.
Purpose: To investigate the assessment, development, generalization, and maintenance of several fundamental specialization activities of severely and profoundly retarded children.
Subjects: 30 severely and profoundly retarded, ambulatory, institutionalized girls and boys, ages 8 to 16.
Methods: One part of the research will utilize single organism research designs to investigate the effects of typical toys in producing social, versus parallel, versus isolate play of the severely and profoundly retarded. Additionally, certain reinforcement contingencies will be applied to investigate their effects and side-effects on social interaction. The second part of the research will evaluate some specific components of socialization that can be translated into a standardized testing and teaching system for workers responsible for teaching social skills to the severely and profoundly retarded.
Duration: April 1976-March 1978.
Cooperating group(s): Medical Research Council, Ottawa, Canada.
Publications: (1) Martin, G. L. *et al. Teaching basic skills to the severely and profoundly retarded: The MIMR Basic Behavior Test, Curriculum Guide, and programming strategy.* Portage la Prairie, Manitoba: Manitoba Institute on Mental Retardation, 1975. (2) Williams, L. *et al.* Effects of a backscratch contingency of reinforcement for table serving on social interaction with severely retarded girls. *Behavior Therapy*, 1975, 6, 220-229.

37-HG-1 MATERNAL IRRADIATION AND DOWN'S SYNDROME

Investigator(s): B. K. Trimble, Ph.D., Assistant Professor, Department of Medical Genetics, Faculty of Medicine, University of British Columbia, Vancouver, B. C., Canada V6T 1W5.

Purpose: To attempt to determine whether maternal irradiation is a significant cause of human nondisjunction, specifically, nondisjunction of chromosome 21.
Subjects: All women having (1) a child with Down's syndrome born in British Columbia between 1952 and 1972, and (2) a history of admission to Vancouver General Hospital.
Methods: Data are to be obtained from computer and manual linkages of existing vital, health, and hosptial radiology records, thereby eliminating the need to rely on a mother's ability to recall past irradiations. The control groups will consist of (1) mothers of children with a nonchromosomal congenital malformation, and (2) mothers of children with no ascertainable congenital malformation.
Findings: Approximately 84,000 obstetrical discharge summary records of children born since 1963 have been received and validated. Preliminary tabulations indicate a statistically significant increased risk of giving birth to a child with Down's syndrome for a woman with a positive X-ray history.
Duration: 1975-1977.
Cooperating group(s): Atomic Energy Control Board of Canada.

37-HH-1 ACCELERATION OF COGNITIVE DEVELOPMENT

Investigator(s): James V. Kahn, Ph.D., Assistant Professor, College of Education, University of Illinois, Room 3331 Education and Communications Building, Box 4348, Chicago, Illinois 60680.
Subjects: Eight severely and profoundly retarded children, ages 43 to 72 months. Six children had Down's syndrome, one had encephalitis, and one had unknown brain damage.
Purpose: To attempt to train severely and profoundly retarded children to improve their level of cognitive functioning; and to attempt to train language skills.
Methods: Subjects were matched for age, etiology, and level of cognitive functioning and then randomly assigned to either an experimental or control group. The Uzgiris and Hunt (1975) scales of sensorimotor period development were used to assess cognitive functioning. The experimental group received training in the object permanence area of the Uzgiris and Hunt scales, while the control group received only the pretest and posttest. The training was direct and correct responses were reinforced. The child started his language training when he achieved the ceiling of the Uzgiris and Hunt scales.
Findings: Improvement was evidenced on all scales and the findings support the training and generalization of object permanence.
Duration: September 1974-June 1976.
Cooperating group(s): (1) Misericordia Home. (2) University of Illinois at Chicago Circle Research Fund.
Publications: (1) Kahn, J. V. Relationship of Piaget's sensorimotor period to language acquisition of profoundly retarded children. *American Journal of Mental Deficiency*, 1975, 79, 640-643. (2) Kahn, J. V. Utility of the Uzgiris and Hunt scales of sensorimotor development with severely and profoundly retarded children. *American Journal of Mental Deficiency* (in press).

37-HH-2 COMPARISON OF MANUAL AND ORAL LANGUAGE TRAINING WITH MUTE RETARDATES

Investigator(s): James V. Kahn Ph.D., Assistant Professor, College of Education, University of Illinois, Room 3331 Education and Communications Building, Box 4348, Chicago, Illinois 60680.
Purpose: To determine if using the American Sign Language program with mute retarded children is more successful than commonly used oral training procedures.

Subjects: 12 nonverbal, hearing, retarded children, ages 4 to 10. None of the subjects have any auditory or motor disability that would inhibit learning of either oral or manual language.

Methods: The subjects were matched according to age, sex, and etiology and were then randomly assigned to one of three groups. One group received oral language training using the Bricker, *et al.* (1973) program. The second group received manual language training also based on the Bricker program; and the third group, the placebo group, received training in self-help skills. In addition, four control subjects received only the pre- and posttest. Double blind testing will be used for the posttest.

Findings: After 2 months of work, the oral training group is still working on learning imitation skills. Two of the manual group subjects are learning signs, while the other two are still learning imitation.

Duration: September 1975-continuing.

Cooperating group(s): (1) Sol School. (2) Misericordia Home. (3) Illinois Department of Mental Health Developmental Disabilities.

Publications: Progress reports are available from the investigator.

37-HH-3 COMPARATIVE STUDY OF TWO SENSORY MOTOR TRAINING PROGRAMS WITH RETARDED PRESCHOOLERS

Investigator(s): Delmont Morrison, Ph.D., Associate Clinical Professor; and Patricia C. Pothier, M.S., Associate Professor and Chairperson, Department of Mental Health and Community Planning, University of California, 3rd and Parnassus, San Francisco, California 94340.

Purpose: To find out the relative effectiveness of two similar intervention training programs with retarded preschoolers.

Subjects: 20 preschool, moderately retarded girls and boys, who have no severe physical or psychological problems.

Methods: The experimental design involves two groups: one which receives sensory integration training, and one which receives movement training. The training lasted approximately 12 months. The children were assessed on measures of motor development, expressive language, and comprehensive language before and after training.

Findings: Pre- and posttest statistical comparisons on these measures demonstrated that although both training groups showed no significant increments over the interval, there was no difference between the groups.

Duration: September 1974-May 1976.

Cooperating group(s): (1) St. Vincent de Paul Pre-School Training Center. (2) University of California at San Francisco Faculty Research Development Funds. (3) University of California at San Francisco School of Nursing.

Gifted

37-IA-1 GIFTED PRESCHOOLERS: A FOLLOW-UP STUDY

Investigator(s): Margaret G. Weiser, Ed.D., Associate Professor, Early Childhood and Elementary Education, College of Education, University of Iowa, Iowa City, Iowa 52240.

Purpose: To determine the validity of high Stanford Binet scores earned at kindergarten entrance and high school achievement; and to solicit opinions about the educational experience, from kindergarten through secondary school, from students identified as gifted at ages 4 to 5, and from their parents.

Subjects: 48 middle class students who had earned Stanford Binet scores of 125+ at the time of entrance to kindergarten (1962). The sample at high school graduation (1975) consisted of 16 white, middle class students and their parents.

Methods: This investigation is a longitudinal study, from kindergarten entrance until high school graduation, of an initial group of subjects who scored 125+ on the Stanford Binet. The data consist of obtained IQ scores from time of kindergarten entrance through 6th grade; Iowa Test of Basic Skills at 8th grade; IQ scores at 10th grade; and College Board Scholastic Aptitude Test and Test Battery of the American College Testing Program percentiles at 11th grade. Data were also obtained through parent interviews and student and parent questionnaires.

Findings: As a group, the subjects have been academically superior and have also been recognized by their peers and communities as leaders in extra curricular endeavors. The majority of subjects and their parents expressed the desirability of ability grouping and or accelerated promotion.

Duration: Spring 1975-Spring 1976.

Emotionally Disturbed and Mentally Ill

37-JA-1 THE COMPARATIVE EFFECTIVENESS OF THE BENDER GESTALT AND THE TRAIL MAKING TESTS IN DIFFERENTIATING BETWEEN PSYCHOTIC AND NORMAL CHILDREN

Investigator(s): Mücella Ormanli, Ph.D., Faculty of Literature, Institute of Experimental Psychology, Istanbul University, Bayezit, Istanbul, Turkey.

Purpose: To compare the performance of psychotic and normal children on the Trail Making and the Bender Gestalt Tests.

Subjects: 60 children, ages 8 to 12, half of whom had been diagnosed as psychotic and half of whom served as normal controls. Normal sample: 15 boys and 15 girls (three boys and three girls at each of five age levels), who were volunteers from the Jefferson Road School in Rochester, New York. Teachers selected the initial candidates for testing by excluding students with either very high or very low intelligence scores. Psychotic sample: 22 boys and 8 girls, approximately equally divided between two hospitals (Convalescent Hospital for Children and Rochester State Hospital, both in Rochester, New York). Subjects were Caucasians except for two black children in the normal sample and three in the psychotic sample.

Methods: No patients were included in the psychotic sample if they were acutely ill, disoriented, confused, or uncooperative at the time of testing. The diagnosis for each patient was based on the information in their hospital records, including a detailed medical history, a psychiatric examination, a psychological evaluation, and any neurological reports. The American Psychiatric Association's *Diagnostic and Statistical Manual* was generally used for a diagnostic guide. All subjects were tested individually using the Bender Gestalt Test (BGT) and the Trail Making Test (TMT). TMT raw scores are the times (in seconds) required by each subject to complete each of the two parts of the test. These scores, in turn, were converted to a 10-point scale, based on Reitan's (1956) *TMT Manual*. Both types of scores were also used in standard analyses of

variance (ANOVA) to test the statistical significance of differences between the two samples. For the BGT, in addition to copying time, four types of errors were scored: distortion of shape, rotation, integration, and perseveration. The samples were again compared via ANOVA on copying time, each of the error types, and total errors.

Findings: The results showed striking and highly significant differences in the average performance of the two samples. On both tests, nearly 100 percent of the normal sample scored in the normal range, as compared to 67 percent of the psychotics on the TMT, and only 30 percent on the BGT. Thus, the BGT appears to be more sensitive to general abnormality; the TMT, more specific to deficit from organic brain damage.

Duration: 1972-completed.

Cooperating group(s): Rochester State Hospital and Jefferson Road School, Rochester, New York.

Publications: Copies of the study are available from the investigator.

37-JB-1 BACKGROUND VARIABLES AND OUTCOME IN CHILD PSYCHIATRY

Investigator(s): T. E. Dielman, Ph.D., Study Director, 3230 Institute for Social Research, University of Michigan, Ann Arbor, Michigan 48109.

Purpose: To investigate the relationship between child psychiatric patients' psychological and family background characteristics and outcome measures at the termination of the child's psychiatric treatment.

Subjects: 3,000 evaluation cases and 1,450 treatment cases from the University of Michigan Child Psychiatric Hospital between 1960 and 1972. The subjects are girls and boys, ages 4 to 18.

Methods: This is primarily an exploratory study to examine the effects of background upon diagnosis and acceptance, the interaction of those variables with treatment recommendations, and the combined interactions of those variables with outcome. Specific hypotheses to be tested are: (1) that concurrent treatment of child and both parents results in a higher proportion of cases rated as improved than do similar cases without concurrent parental treatment, (2) that there are systematic differences in the psychological and background characteristics of cases defecting from treatment compared to those completing treatment, and (3) that length and frequency of treatment is positively associated with an outcome rating of improved at the close of treatment. Data will be gathered by completing standard forms on each child. Multivariate methods of statistical analyses are to be employed in data reduction and subsequent prediction.

Duration: May 1975-July 1976.

Cooperating group(s): National Institute of Mental Health; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.

37-JC-1 ADULT ADJUSTMENT PREDICTED FROM CHILDHOOD ASSESSMENT

Investigator(s): Loretta K. Cass, Ph.D., Assistant Professor of Medical Psychology, Medical School; Doris C. Gilpin, M.D., Acting Director; and Marylyn Voerg, Ph.D., Chief Psychologist, Child Guidance Clinic, Washington University, 369 North Taylor Avenue, St. Louis, Missouri 63108; and Carolyn Thomas, Ph.D., Associate Professor, Department of Social Work, Boston College, Chestnut Hill, Massachusetts 02167.

Purpose: To determine whether overall social and personal adjustment of adults can be predicted from behavior, symptoms, and social and clinical data collected consistently on each child.

Subjects: Adults who were seen as children at the Washington University Child Guidance Clinic from 1961 to 1965, whose IQs were above 75, and who had a diagnostic study at that time. The children were ages 5 to 15; 25 percent were girls. The children's families were mainly from the greater St. Louis metropolitan area and from all social classes. The children's disturbances included reactive disorders, neuroses, character disorders, borderline psychoses, and psychoses.

Methods: This was a 10-year follow-up study on childhood development and assessment. The investigator tested three hypotheses: (1) that adult personal and social adjustment of people seen as children at a clinic can be predicted from early social, symptomatic, and clinical data; (2) that the kind and seriousness of adult mental illness and behavior disorders can be predicted from childhood behavior, symptoms, social factors, and personality variables derived from clinical assessment of the child; and (3) that individuals treated as children will have improved more than the untreated group. The research employed a high risk design. Subjects were interviewed (as adults) by workers who had no knowledge of the childhood data. The mother was interviewed separately. The adult data were rated on items of social and personality adjustment. Separate workers rated the material from childhood. The high risk design provided its own controls; i.e., those subjects who did *not* develop adult disorders, but who, like the experimental group, were referred to the clinic for childhood disturbances. The research was planned and the data collected in the 1960's as a prospective study. Each subject had a complete clinical diagnostic study including social history, psychiatric interviews, and the same battery of psychological tests. The same form data (i.e., application, symptoms, developmental information, and conference notes) were collected on each subject. Subjects who received therapy were compared on outcomes to those who did not. Various statistical measures were employed (e.g., correlation of various childhood and adult adjustment ratings, number and severity of symptoms in childhood with adult outcome, ratings from interview, and testing with adult outcome, etc.). Finally, a multiple discriminant analysis selected the combination of variables that best predicts certain adult outcome variables.

Duration: September 1974-September 1976.

Cooperating group(s): (1) National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare. (2) Grant Foundation.

37-JC-2 THE DEVELOPMENT OF A PROGRAM FOR SOCIALLY WITHDRAWN CHILDREN

Investigator(s): Hyman Hops, Ph.D., Programs Director; Diane Fleischman, M.S.W., Program Consultant; Jacqueline Guild, M.A., Program Consultant; and Stanley C. Paine, M.S., Program Consultant, Center at Oregon for Research in the Behavioral Education of the Handicapped, University of Oregon, 1590 Willamette, Eugene, Oregon 97401.

Purpose: To develop a comprehensive treatment package for the remediation of socially withdrawn behavior in primary grade children implemented via a teacher-consultant in the educational setting.

Subjects: Five girls and two boys in the primary grades referred by their teachers because of isolate noninteractive behavior. Observation data indicated that their level of social behavior was consistently below that of their respective peer group.

Methods: Subjects and five randomly selected peers in each class were observed during recess and one in-class period using an observation code developed at the center. An intervention package that included several components based on previous research was introduced in multiple baseline fashion. The components included a token economy with a group backup reward system, a preprogrammed joint activity, and a self-report condition.
Findings: The package was effective in increasing the amount of time spent in social behavior for each subject beyond the level of the peer group. Fading of the various controlling stimuli varied with individual children.
Duration: September 1972-December 1977.
Cooperating group(s): Bureau of Education for Handicapped, Office of Education, U. S. Department of Health, Education, and Welfare.

37-JE-1 PICA IN CHILDREN

Investigator(s): Don L. Thurston, M.D., Professor; and Gene Grabau, M.D., Clinical Instructor, Department of Pediatrics, St. Louis Children's Hospital, 500 South Kingshighway, St. Louis, Missouri 63110.
Purpose: To treat and cure pica.
Subjects: Children, ages 2½ to 6.
Methods: The subjects will have their blood cobalt levels taken before and after treatment with cobalt. Levels of cobalt in the blood will be determined by gas chromatography.
Findings: Results indicate a complete cessation of pica.
Duration: 1975-continuing.
Cooperating group(s): St. Louis Health Department Laboratories.
Publications: Grabau, Gene and Thurston, Don L. Cobaltous chloride in the treatment of children with pica. Abstract submitted to the Meeting of the Ambulatory Pediatric Association, Toronto, Canada, 1975.

37-JE-2 BEHAVIORAL CORRELATES OF AUTISM

Investigator(s): B. J. Freeman, Ph.D., Assistant Professor, Department of Psychiatry, School of Medicine, University of California, Los Angeles, California 90024.
Purpose: To establish an objective diagnosis for autism.
Subjects: 90 autistic, 90 mentally retarded, and 30 normal children, ages 2 to 5.
Methods: The research design of this study involves observing and counting behaviors in an unstructured setting using an objective rating scale. A new diagnostic tool is being developed and 69 behaviors considered autistic are being counted. The gathered data will be subjected to discriminant analysis.
Duration: September 1975-December 1980.
Publications: Ritro, Freeman, Ornitz, and Tanquay (Eds.) *Autism: Diagnosis, current research and management.* Holliswood, New York: Spectrum Publications, 1976.

37-JE-3 SPONTANEOUS VERBAL LANGUAGE FOR AUTISTIC CHILDREN THROUGH SIGNED SPEECH

Investigator(s): Benson Schaeffer, Ph.D., Associate Professor; and Peter McDowell, B.A., Department of Psychology; and Arlene Musil, M.A.; and George Kollinzas, M.A., Department of Special Education, University of Oregon, Eugene, Oregon 97403.

Purpose: To foster spontaneous verbal language in autistic children.
Subjects: Two nonlanguage autistic boys, ages 5 and 5½; and one minimally echolalic autistic boy, age 4½.
Methods: This study assesses a new treatment for autism called "signed speech." Signed speech treatment involves teaching autistic children sign language and imitative speech, integrating the two skills, and then gradually fading out the sign language. The teaching of sign language allows autistic children to begin communicating spontaneously via manual signs. The teaching of imitative speech allows autistic children to produce utterances but does not, even when followed by training in the use of the utterances for communicative purposes, seem to yield the spontaneous use of language.
Findings: Spontaneous sign language occurred first, followed by spontaneous signed speech, and, last, spontaneous verbal language.
Duration: August 1974-July 1976.
Cooperating group(s): National Institute of Mental Health, Health Services and Mental Health Administration, U. S. Department of Health, Education, and Welfare.

37-JE-4 LONGITUDINAL INVESTIGATIONS IN EARLY CHILDHOOD PSYCHOSIS

Investigator(s): William Goldfarb, M.D., Ph.D., Director, Henry Ittleson Center for Child Research, 5050 Iselin Avenue, Riverdale, New York 10471.
Purpose: To investigate early childhood psychosis.
Subjects: 93 children studied from early school age to adulthood.
Methods: This is a longitudinal study to investigate the life course of psychotic children from early school age to adulthood. Data include psychiatric and social outcomes and tests and measurements of a subset.
Findings: Changes in treatment have been reported. Postdischarge findings are in the process of tabulation.
Duration: 1974-1977.
Publications: Goldfarb, W. *Growth and change of schizophrenic children: A longitudinal study*. Washington, D. C.: Winston-Wiley, 1974.

37-JG-1 PARENTS INVOLVED IN TEACHING CHILDREN IN NEED

Investigator(s): Wilfred Newman, Ed.M., School Psychologist, Mental Health Services, Rochester City School District, 13 Fitzhugh Street South, Rochester, New York 14614.
Purpose: To help parents of emotionally handicapped children gain a better understanding and ability to cope with their own children and relate their positive experiences to other parents of emotionally handicapped children.
Subjects: 80 emotionally handicapped children, ages 7 to 12 (40 were directly involved and 40 were used as a comparison group); and 10 parents of emotionally handicapped children.
Methods: Parents of emotionally handicapped children were hired to work with emotionally handicapped children, not their own, as classroom aides. The parent aides worked in four classrooms of 10 students for 15 hours a week helping students with assignments and projects. They also spent about 3 hours a week with the investigator discussing problems with their own children or problems that arose in the classroom. Aides also served as liaison persons between other parents of emotionally handicapped children and the teachers, accompanying teachers on home visits or speaking on the educational program at parent meetings. Pre- and postevaluations were made on the children and parents using the Metropolitan Reading Achievement Test, Metropolitan Arithmetic Achievement Test,

Wide Range Achievement Test (Reading and Arithmetic), Draw-A-Person, Student Attitude and Self-Concept Scale, Parent Attitude Scale, and Teacher Behavior Rating Scale (the student, parent, and teacher scales were locally developed). The data were statistically treated using means, range, and chi- or t-square analyses.

Findings: Students in the demonstration school have indicated improved academic functioning in reading and arithmetic averaging 5 months, which is significantly higher than the results found in the comparison school at the .01 level of confidence. Students at the demonstration school have shown improved social-emotional coping behaviors. The parents involved have gained a better understanding of the school system and of their children. Parents have communicated with and contacted other parents of emotionally handicapped children, have been able to relate their positive experiences, and have become interested in continuing their educational and vocational plans where no previous interest existed.

Duration: September 1975-June 1976.

Cooperating group(s): Office of Education, Education Division, U. S. Department of Health, Education, and Welfare.

Publications: Final data and results are available from Title III Evaluation Offices, Albany, New York.

37-JH-1 A FOUR-WAY APPROACH TO THE PREVENTION OF EMOTIONAL DISTURBANCE IN PRESCHOOL CHILDREN LIVING IN THE HARLEM-EAST HARLEM AREA

Investigator(s): Mamie Phipps Clark, Ph.D., Executive Director, Northside Center for Child Development, 1301 Fifth Avenue, New York, New York 10029.

Purpose: To demonstrate the effects of intervention by a mental health team on children's development.

Subjects: Approximately 150 nursery school children, 150 parents, and 40 teachers. The population is black, Spanish-speaking, and white; residents of an inner city ghetto; and over 90 percent are receiving public assistance or have such marginal incomes that they cannot afford a fee.

Methods: A mental health team consisting of a full-time psychiatric social worker, a part-time psychologist, a psychiatrist, and a nutritionist will conduct the 1-year experiment, which is to be evaluated by an independent research team. The children will be divided into two experimental groups and two control groups. The four components of the preventive program are (1) parent activity-discussion groups, (2) consultation with teachers on children with potential for behavior problems, (3) a "think" or "brain training" program for the children, and (4) a nutrition education program for children, parents, and teachers. Before and after testing will determine whether the preventive program results in greater self-esteem and emotional stability in the experimental group preschoolers than in preschoolers in the control group.

Duration: November 1975-August 1976.

Cooperating group(s): (1) Children's Bureau, Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare. (2) First Spanish Methodist Church Nursery. (3) East Calvary Nursery. (4) La Hermosa Day Care Center.

37-JH-2 DIAGNOSIS AND TREATMENT OF CHILDHOOD DEPRESSION

Investigator(s): Theodore A. Petti, M.D., Medical Director, Children's Intensive Care Unit, Western Psychiatric Institute and Clinic, 3811 O'Hara Street, Pittsburgh, Pennsylvania 15261.

Purpose: To develop instruments to aid in screening and following the course of depression in children; and to determine effective treatment modalities.
Subjects: Seven children, ages 6 to 12, studied in an open investigation; and a second study is to follow which will use 20 children, ages 6 to 12, who have been depressed for at least 1 month prior to being studied.
Methods: The design of the second investigation is a double blind placebo and involves treating depressed children with imipramine. The children will be divided into two groups: one group of depressed children who will receive imipramine, and a second group of children who will not be given imipramine. Neither group of children will be composed of psychotic, brain damaged, or retarded children. The children taking imipramine will receive up to 5 milligrams per kilogram of the drug per day for 3 weeks at optimum dosage. The course of depression will be followed in both groups of children by scales being developed. The instruments will include a School Age Depression Listed Inventory (SADLI) for use by a psychiatrist in a short duration interview; a Teacher Affect Rating Scale (TARS), a 26-item scale for use by teachers; and a Scale of School Age Depression (SAD), a 25-item scale to be used over a period of a day by nurses and other ward personnel.
Findings: In the open-ended study, children responded to imipramine, and a decrease in depression symptomatology as measured by the scales was found.
Duration: May 1974-continuing.

37-JH-3 TASK-CENTERED GROUP WORK WITH MOTHERS OF CHILDREN WITH SPECIAL NEEDS

Investigator(s): Barbara A. Levine, M.S.S.A., Director, Child Development Program, Youth Guidance Center, 88 Lincoln Street, Framingham, Massachusetts 01701.
Purpose: To evaluate the acceptability of the clinical approach to subjects; and to evaluate the effectiveness of the treatment in the subjects' opinions.
Subjects: 25 mothers of preschool children with special needs including mental retardation, emotional problems, developmental delay, or multiple handicaps.
Methods: In this study problems and tasks of treatment are identified by clients. Clients also assess their progress monthly using instruments modified from those developed by Reid and Epstein. Reported clients' progress will be summarized but the summary will not lend itself to statistical treatment.
Findings: Clients think that this approach is more useful than previous general discussion in groups.
Duration: October 1975-October 1977.

37-JI-1 GROUP MANAGEMENT THROUGH INCENTIVE SYSTEMS

Investigator(s): J. Kent Davis, Ph.D., Supervising Psychologist, The Children's Village, Dobbs Ferry, New York 10522.
Purpose: To develop a cottage management system which would help child care staff to manage routine child responsibilities more efficiently so that they could devote more attention to specific treatment needs of individual children; and to decrease children's problem behaviors.

Subjects: 48 boys, ages 8 to 14, who have been placed in a children's residential treatment center because of behavioral and emotional problems in the community. Many of the children also have severe learning handicaps.

Methods: The design of this study is a repeated measures design. Data are collected before and during the program. Evaluation procedures, to determine the effectiveness of the program, will be structured interview schedules for the child care staff and the Devereux Child Behavior Rating Scale. The rating scale will be filled out, for each child, every 6 months. The structured interview was developed by the center and was designed to evaluate staff attitudes toward the program. The staff was interviewed at 6-month intervals during the first year. The initial impact of the program was studied by comparing behavior in cottages implementing the program with behavior changes in other cottages. Long-term effects on behavior are under study.

Duration: July 1973-December 1976.

Socially Deviant

37-KA-1 FAMILY INTERVENTION CENTER

Investigator(s): Gerald R. Patterson, Ph.D., Research Associate; and Robert E. Conger, M.A., Director, Family Intervention Center, Oregon Research Institute, P. O. Box 3196, Eugene, Oregon 97403.

Purpose: To replicate previous findings and to further systematize a training program to teach parents how to use management training techniques with their socially aggressive children.

Subjects: 40 girls and boys, ages 3 to 12, who are socially aggressive.

Methods: Families involved in this program personally contact the program or are referred by professionals. After acceptance, the parents and child are interviewed separately by the therapy team. In the parent interview, a behavior checklist for the problem child is completed jointly by parents and therapist and is used for later research. (Parents rate the child's behavior on a 7-point desirability scale.) The parents then complete the Minnesota Multiphasic Personality Inventory at home for the second interview. In the child interview, the therapist elicits his her reactions to a set of standardized settings, and the child completes the reading and arithmetic sections of the Jastek Wide Range Achievement Test. As the child works, the interviewer or another staff member observer completes a behavior checklist. After the interviews, three prebaseline standard observations are made in the family's home at the same time (prior to, during, or after supper) on three weekdays. During the standard observation, each family member is observed twice, each time for 5 minutes. Observations are encoded on a behavior rating sheet, using a 29-item behavior code. Family responsibilities during the observations are that all family members are present, movement is restricted to two rooms, there are no telephone calls or television watching, and appointments may not be cancelled except in an emergency. Following each observation throughout the project, the parents complete a parent referral sheet on which they record problem behaviors that occurred during the day. Each family is then assigned to one of two observation schedules. Schedule 1 involves standard observations made on 12 different days over a 3- to 4-week period. Schedule 2 involves an alternating program of 4 hours of observation one day and a standard observation the next, for 12 days over a 3- to 4-week period. For the 6 days on which a 4-hour observation occurs, the following schedule is used: 1 hour before school, 1 hour after

school (when at least one parent is present), 1 hour before supper, and 1 hour at suppertime (standard observation). On Schedule 1, all family members are observed twice for 10 minutes per family member per session. On Schedule 2, observers code only the target child, except at suppertime when all family members are observed as in Schedule 1. The same behavior rating sheet and parent referral sheet used in prebaseline observations are used in these observations. On the last day of the baseline study, the observer gives each parent a copy of a programmed text outlining the principles of behavior treatment. Parents are given a brief examination on the social learning concepts and principles presented in the text. If understanding is not adequate, the therapists and parents review critical frames from the text. The therapists use the collected data and decide upon a behavior for the parents to observe and deal with first. In a second interview, parents are given clear descriptions of behaviors and are presented with methods for their observations. Parents collect data for 3 to 5 days after the second interview, and therapists call daily to record and graph the data. When at least 3 days of baseline data have been reported, parents are asked to think about a program to change the behavior they have observed and to present ideas at a meeting with the therapy team. Four weeks after parents attend the first parent meeting, observers make behavior observations in the home. These observations occur every 4 weeks during treatment and at the termination of intervention. After 8 weeks of intervention, therapists decide whether the family should continue or terminate treatment and begin follow-up procedures. When the family has met the criteria for successful intervention, the parents again complete the personality inventory and behavior checklist completed during the first interview. Follow-up lasts for a minimum of 12 months. Standard observations are made on two consecutive evenings during each of the first 6 months and for months 8, 10, and 12. Parent referral sheets are collected after each observation. Therapist assistance is available to the family during follow-up.

Findings: It is possible to train parents in the social learning principles needed for competency in parenting skills and in handling behavioral problems within a family setting.

Duration: January 1974-continuing.

Cooperating group(s): Division of Crime and Delinquency, National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare.

Juvenile Delinquency

37-KC-1 THE DYNAMICS OF DELINQUENT BEHAVIOR: A NATIONAL SURVEY

Investigator(s): Delbert S. Elliott, Ph.D., Director, Behavioral Research Institute, 2305 Canyon Boulevard, Boulder, Colorado 80302.

Purpose: To provide a description of the incidence, distribution, and pattern of delinquent behavior across time; to specify the relationship between these elements of delinquent behavior and officially recorded responses to delinquent behavior; and to identify those variables that account for the observed changes in levels and patterns of involvement in delinquent behavior across time.

Subjects: A national probability sample of youths, ages 11 to 17.

Methods: The theoretical conceptualization of this research is based upon an integration of strain and control theory. Two sets of conditions which lead youth into involvement in delinquent behavior have been postulated: (1) weak bonds to conventional society, and exposure and commitment to groups involved in delinquent activity; and (2) strong bonds to conventional society, conditions and experiences that serve to attenuate these bonds, and exposure and commitment to groups involved in delinquent activity. The variables being measured are integration (occupancy of conventional social roles, relative absence of sanction networks, etc.); commitment (normlessness, attachment to family, self-esteem, etc.); exposure to deviance, delinquency, and mediators (negative labeling-counterlabeling, success-failure, organized-disorganized social contexts). Analysis of data will be done by cluster and typological analyses, discriminant and regression analyses, as well as patterns of change analysis utilizing analysis of variance techniques.
Duration: September 1975-February 1980.

37-KD-1 FAMILY INTERACTION, CHILD AGE, AND DIAGNOSTIC STATUS

Investigator(s): Theodore Jacob, Ph.D., Associate Professor, Department of Psychology, University of Pittsburgh, Pittsburgh, Pennsylvania 15260.
Purpose: To assess relationships between age of child (preadolescent vs. adolescent) and child diagnostic status (conduct disorder, personality problem, and normal) insofar as affective patterns of family influence conflict affect and communication flexibility.
Subjects: 60 intact families containing a delinquent son, ages 11 to 18; and 60 intact families containing a normal son, ages 11 to 18.
Methods: Data collection will be done primarily through direct observations in which different combinations of family members (father-mother, father-child, mother-child, and father-mother-child) will be videotaped during involvement of a conflict resolution task. The delinquents will be divided by age into two groups: adolescents, ages 15 to 18; and preadolescents, 11 to 14. Delinquent subjects within each group will be categorized as conduct disorder or personality problem, based on the parent's rating on the Behavior Problem Checklist. Measurement procedures (process and outcome) will assess patterns of conflict, influence, affect, and communication clarity. Evaluations will include within and between family analyses.
Duration: November 1974-October 1977.
Cooperating group(s): Allegheny County Juvenile Court.

37-KE-1 PSYCHIATRIC STUDIES OF JUVENILE DELINQUENTS

Investigator(s): D. Offer, M.D., Co-Chairman, Department of Psychiatry, Michael Reese Hospital and Medical Center, 2839 South Ellis Avenue, Chicago, Illinois 60616; R. C. Marohn, M.D., Director; and E. Ostrov, Ph.D., Research Director, Adolescent Services, Illinois State Psychiatric Institute, 1601 West Taylor Street, Chicago, Illinois 60612.
Purpose: To elucidate the familial and psychological etiology of juvenile delinquency; to delineate juvenile delinquents into distinctive psychological subtypes; to explore professionals' attitudes toward juvenile delinquents; and to follow delinquents after hospitalization to assess treatment effects.
Subjects: 55 disturbed delinquents, ages 13 to 17, male and female, who have evinced serious and persistent violation of the law or social norms, who were adjudged as needing institutionalization, and who were found not to be overtly psychotic, retarded, or brain damaged.

Methods: A broad variety of instruments, including the Delinquency Check List, Offer Self-Image Questionnaire, Rorschach, Thematic Apperception Test, Wechsler Intelligence Scale for Children, and various structured and semistructured interviews were used to collect the data. Staff assessments and attitudes were tapped by paper and pencil type instruments and interviews were videotaped. The special procedures used included a Revealed Differences Technique interview conducted with the parents and rated using the Bales Interaction Categories and the Adolescent Behavior Checklist. The Adolescent Behavior Checklist was a precoded, weighted series of items each describing a discrete antisocial behavior, which was rated three to five times daily by staff. Statistical analyses included multivariate analysis of variance and factor analyses.
Findings: The main unpublished finding revolves around the result of a factor analysis of all the key variables which indicated the presence of four orthogonal factors which correspond to impulsivity, depression, passivity, and narcissism-denial dimensions respectively. This four-dimensional grid seems clinically useful in delineating delinquent personality types.
Duration: July 1969-July 1977.
Publications: A monograph: *Psychiatric studies of juvenile delinquents* to be published by Basic Books, Inc.

37-KH-1 FAMILY LIFE AND LEVELS OF INVOLVEMENT IN AN ADOLESCENT HEROIN EPIDEMIC

Investigator(s): David Graeven, Ph.D., Associate Professor, Department of Sociology; Robin D. Schaef, M.S., Research Associate, The Research Foundation; Hilary Fry, Ph.D., Professor, Department of Public Administration; and William Folmer, M.A., Research Associate, California State University, Hayward, California 94542.
Purpose: To examine family life as it is related to different levels of involvement with heroin for males and females.
Subjects: 203 subjects, of whom 56 were female. Most of the subjects were white, ages 21 to 25 at the time of the interview, and were from suburban working class areas.
Methods: This investigation is a retrospective study of family life in high school. Data were collected through interviews. The sample of subjects included addicts, experimental heroin users, exposed persons, and a comparison group of nonexposed nonusers. Correlations and regression analysis were the statistical procedures used to analyze data.
Findings: More elements of family life were related to heroin use by females than by males. The relationship with the cross-sex parent had the strongest impact on male and female heroin users. Family life variables were not as strong predictors for other drug use and deviant behavior in females as they were for males.
Duration: October 1974-October 1976.
Cooperating group(s): (1) National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare. (2) California Department of Health, Substance Abuse Branch.
Publications: Graeven, David B. and Schaef, Robin D. Family life and levels of involvement in an adolescent heroin epidemic, Research Report No. 2. Hayward, California: Adolescent Research Project, California State University, May 1976. The report is available from Dr. Graeven.

37-KH-2 YOUTH ALCOHOLISM PREVENTION AND COUNSELING

Investigator(s): George F. Ludi, B.A., Director; and Gordian L. Armstrong, Head Counselor, La Fe Youth Hostel, 1035 Alto Street, P. O. Box 5697, Santa Fe, New Mexico 87502; Brenda Blassingame, Program Administrator, Youth Alcoholism Program, National Institute on Alcohol Abuse and Alcoholism, 5600 Fishers Lane, Rockville, Maryland 20852; Dan Croy, M.D., Secretary, Department of Hospitals and Institutions, Lamy Building, Santa Fe, New Mexico; Art Amrijo, Director, New Mexico Commission on Children and Youth, P. O. Box 26584, Albuquerque, New Mexico 87125; and Robert Esparza, Deputy Superintendent, Department of Education, Education Building, Santa Fe, New Mexico 87501.

Purpose: To alleviate the problem caused by alcoholism and alcohol abuse among the youth of Santa Fe County.

Subjects: Approximately 5,000 youths annually, male and female, ages 8 to 18, who attend grades 4 to 12 in Santa Fe County.

Methods: The program seeks to alleviate alcohol problems through close coordination with the public school system and other social services agencies. The goals and objectives of the program are (1) reduction of high incidence of alcohol abuse and alcoholism; (2) continuation of an early identification program; (3) maintenance of an alcohol abuse and alcoholism prevention program; (4) motivating institutional change within the educational system for change toward alcoholism; and (5) the establishment of a youth temporary residential facility geared to youth needs, including youth detoxification services. The program objectives are achieved through (1) the expansion of individual and family counseling services; (2) maintenance and expansion of a formal cross-referral system with other service delivery resources; (3) continuation and refinement of the structured education program for the prevention of youthful alcohol abuse and alcoholism; and (4) provision of the methodology of alcoholism consultation, orientation, and awareness techniques for early identification of alcohol impacted youth by school staff. Data are gathered through prepost questionnaires to measure factual knowledge, classroom discussion reports (a compilation of students' questions and statements), a self-analysis questionnaire (Twenty Questions), and a combined student evaluation of the presentations and identifier of potential clients. An item analysis will be made on all the measurement instruments.

Findings: The data indicate a usage of alcohol by both adult and youthful populations in excess of national estimates (89 percent of the latter group). Both legislation and family inculcation of responsible drinking has been inadequate to prepare youth for life in an alcohol-using society.

Duration: May 1974-December 1978.

Cooperating group(s): (1) National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare. (2) Santa Fe Community Action Programs. (3) Santa Fe Public Schools. (4) Commission on Alcoholism, Santa Fe, New Mexico. (5) Recovery of Alcoholics Program, Santa Fe, New Mexico.

Publications: (1) Quarterly reports are made to the National Institute on Alcohol Abuse and Alcoholism. (2) *The Operations Manual of Instruction* for La Fe Youth Hostel is registered with the Library of Congress and cited agencies.

37-KK-1 EVALUATION OF JUVENILE DIVERSION PROGRAMS

Investigator(s): Marvin Bohnstedt, Ph.D., Research Specialist III, California Youth Authority, 1829 - 16th Street, Sacramento, California 95814.

Purpose: To evaluate 15 juvenile diversion programs funded by the California Office of Criminal Justice Planning.

Subjects: The projects served approximately 5,000 clients a year. Sixty-one percent of project clients were males; 39 percent, females. Forty-two percent of the clients were ages 13 to 15; 6 percent were under 10 years old; and 4 percent were over 21. Fifty-one percent of the clients were referred for status offenses; 36 percent, referred for criminal acts; and 13 percent, for other behavior.

Methods: Most projects have not been willing to employ randomized experimental design. Consequently, the researchers have selected matched groups to be compared with study clients. Diversion project staff have completed standardized forms describing each client's demographic characteristics and the type and quantity of service rendered to each client. Researchers have collected information from justice system records concerning arrests prior and subsequent to project referral. Chi-square is being used to test the significance of differences between diversion project clients and matched comparison groups.

Findings: (1) Over half of the project clients were not diverted; e.g., would not have been processed further in the justice system absent the *diversion* projects. (2) Each project cost more than the justice system costs that would have been incurred by the clients who were diverted. (3) Three out of eight projects studied thus far appear to have reduced subsequent arrests of their clients.

Duration: July 1974-September 1977.

Cooperating group(s): (1) California Office of Criminal Justice Planning. (2) Fifteen diversion projects.

Publications: *Evaluation of juvenile diversion programs' interim report.* Sacramento, California: California Youth Authority, May 1976. The report is available from the investigator.

37-KK-2 AN EVALUATION OF A PRETRIAL INTERVENTION PROJECT FOR JUVENILES

Investigator(s): Herbert C. Quay, Ph.D., Director, Program in Applied Social Sciences, University of Miami, Coral Gables, Florida 33124.

Purpose: To evaluate the impact of a project involving counseling, remedial academics, vocational training, and job placement on postprogram rearrest rates on dependent and delinquent children.

Subjects: Experimental group: 316 males, 120 females. Control group: 96 males, 36 females. Subjects are ages 12 to 17; mean age, 15.83. The experimental and control groups are equal in race, age, socioeconomic status, education, and a prior offense as a result of random assignment from a pool of eligibles.

Methods: Postprogram rearrests of the experimental subjects are compared with those of the controls in terms of number of cases rearrested and average rearrests per case controlled for exposure time. Data on personality change, academic gains, and job earnings are also collected for experimental subjects.

Findings: Preliminary analyses suggest that experimental subjects experience a small, but statistically significant, advantage in rearrests. Certain variables are predictive of rearrest. A small (25% ±) proportion of both experimental and control groups account for a disproportionate number (50% ±) of rearrests.

Duration: July 1974-July 1976.

Cooperating group(s): (1) Learning Systems, Inc., Boston, Massachusetts. (2) U. S. Department of Labor.

Corrections

37-KP-1 A CROSS-CULTURAL ANALYSIS OF ADMINISTRATION OF JUVENILE JUSTICE

Investigator(s): Josefina Figueira McDonough, Ph.D., Faculty Associate, Institute for Social Research, University of Michigan, Ann Arbor, Michigan 48109.
Purpose: To compare the court processing of juveniles in North America and Brazil.
Subjects: 5,200 youths, ages 10 to 17.
Methods: In this investigation, a comparison was made of administration of juvenile justice in Brazil and the United States to test labeling biases on who is seen as a juvenile delinquent. Data were collected from court records in the State of Guanabara, Brazil and Pennsylvania covering the same time period — 1966 to 1968. Data were analyzed that concerned the relation between the social characteristics of the juveniles and court environments, types of offenses committed, and the courts' patterns of processing. An attempt was made to identify sociostructural indicators to account for cross-cultural differences in crime and disposition of offenders. The analysis dealt with labeling theory parameters, particularly whether the existence of systematic processing biases have a selective effect on who becomes officially a delinquent in each cultural setting. Also included were demographic data from the census, relative to distribution of relevant variables (age, sex, race, education, population density) within each court's area of jurisdiction. Data analysis was conducted on two levels: (1) intracultural analysis — the data within each court were tested against an overall model in which court procedures form a cluster of dependent variables, characteristics of minors form a set of independent variables, and characteristics of offenses form the intervening variables; and (2) intercultural analysis — the results of the two intracultural analyses were compared.
Findings: Brazilian courts are more responsive to juveniles' social handicaps. North American courts use more expedient and stereotyped (race, sex) criteria for decision making.
Duration: April 1974-completed.
Cooperating group(s): National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare.
Publications: National Institute of Mental Health Report: A cross-cultural analysis of administration of juvenile justice: A transitional model of the ecology of juvenile delinquency. *Luso Brazilian Review*, Winter 1976.

37-KP-2 EVALUATION STUDY OF LEAA STATUS OFFENDER DEINSTITUTIONALIZATION PROGRAM

Investigator(s): Solomon Kobrin, Ph.D., Professor; and Malcolm W. Klein, Ph.D., Chairman and Professor, Department of Sociology, Social Science Research Institute, University of Southern California, Los Angeles, California 90007.
Purpose: To assess the effectiveness of a program to provide community based youth services as an alternative to the detention and incarceration of status offenders; i.e., those charged with noncriminal acts sanctioned by juvenile offense legal codes.

Subjects: Approximately 4,000 male and female youths of juvenile court age in eight states at selected sites. The subjects were arrested or cited by police or referred to juvenile justice agencies, school authorities, parents, or citizens for status offenses.
Methods: Offense behavior and social adjustment of evaluation subjects sampled from program client inflow will be measured three times during the 2-year program period. Matched comparison groups will be drawn from preprogram cohorts in each program site. Analysis will test for effects of interactions among offense type, subject characteristics, and program type and exposure on behavioral outcomes.
Duration: February 1976-December 1977.
Cooperating group(s): Office of Juvenile Justice and Delinquency Prevention, Law Enforcement Assistance Administration, U. S. Department of Justice.
Publications: A final report will be available from the Law Enforcement Assistance Administration (LEAA).

37-KR-1 THERAPEUTIC HOME FOR CHILDREN

Investigator(s): Alberto Namer, Psychologist, Director, Hogar Terapeutico Infantil del Consejo del Nino, Ellauri 641 p. 1 ap .5, Montevideo, Uruguay, South America.
Purpose: To determine the effectiveness of new methods of institutional treatments.
Subjects: 36 boys, ages 6 to 12, who are socially deprived, have family problems and are emotionally disturbed (neurotic or pre-psychopathic). All subjects have normal IQs.
Methods: The investigation is developed around a work hypothesis having a psychoanalytic basis, where regression is used as the fundamental element to rectify behavior disorders. Counselors, teachers, a social worker, and a psychologist work with children in a residential treatment center. An atmosphere is created that allows for free expression of aggressive feelings and the development of a relationship between adult and child. Within the adult-child relationship, dependency will be stimulated and a strong and intensive love demonstration will be used as the basis for regression. A scholar program, which includes a pedagogical program, will endeavor to develop and stimulate an interest in apprenticeship.
Findings: It has been observed that the method is useful because it creates important and affective relations and gradually decreases aggressiveness and frequent runaways.
Duration: January 1971-continuing.
Publications: Information is available from the investigator.

37-KR-2 YOUTH HOME DEVELOPMENT PROJECT

Investigator(s): Cary Cherniss, Ph.D., Assistant Professor; Richard H. Price, Ph.D., Professor; Dennis N. T. Perkins, M.A., Graduate Student; and Maybeth Shinn, M.A., Graduate Student, Community Psychology Area, Psychology Department, University of Michigan, 529 Thompson Street, Ann Arbor, Michigan 48109.
Purpose: To develop and evaluate a survey feedback intervention system for improving the social environments of community residential programs for youth.
Subjects: The project will eventually involve 20 group homes for youths of both sexes, ages 8 to 19. The subjects will be either delinquent or emotionally disturbed, and most of them will be in their middle teens. Each home will house between 3 and 20 youths and employ 3 to 8 staff members.

Methods: Phase 1 of the research will test the efficacy of the intervention, while Phase 2 will compare the effects of using internal change agents from the youth program staffs and external change agents from the university. Programs will be randomly assigned to experimental or control treatments after blocking into similar pairs. Moos's Community Oriented Programs Environment Scale and a work climate scale (based on the Michigan Survey of Organizations, which involves assessment, data feedback, problem solving, and reassessment) will be used for the intervention. The evaluation will employ multiple measures of youth and staff attitudes and behavior; namely, questionnaire data, behavior observations, and archival data from program records.
Duration: November 1975-December 1979.

37-KR-3 AN APPRAISAL OF THE PSYCHOSOCIAL EFFECTIVENESS OF A GROUP HOME TREATMENT PROGRAM FOR ADOLESCENT GIRLS

Investigator(s): Jerome L. Singer, Ph.D., Professor, Department of Psychology, Yale University, New Haven, Connecticut 06520.
Purpose: To determine the outcome of residential treatment type group home living for adolescent girls.
Subjects: All girls (N = 24) who were in the AJC group home for adolescent girls from 1959 to 1969.
Methods: At time of admission to the program, subjects were rated in five areas along an 11-point scale. Similar ratings were made on the basis of tape recorded follow-up interviews. Memory recall, both spontaneous and elicited, was rated in terms of key people in the program and key aspects of the program. A predicted outcome technique was used as a substitute for a control group. The seven case judges made two predictions: (1) the outcome of the girls if they had not come into the program nor had any other kind of treatment, and (2) the outcome on the basis of optimal treatment.
Duration: March 1972-completed.
Publications: A monograph will be published by Child Welfare League of America, Inc., 67 Irving Place, New York, New York 10003, Fall 1976.

THE CHILD IN THE FAMILY

Family Relations

37-LA-1 PARENT-ADOLESCENT RELATIONSHIP DEVELOPMENT PROGRAM (PARD)

Investigator(s): Bernard G. Guerney, Jr., Ph.D., Professor; and E. Vogelsong, Ph.D., Assistant Professor; College of Human Development, Catherine Beecher House, Pennsylvania State University, University Park, Pennsylvania 16802.
Purpose: To remediate and enhance the relationship between parents and their adolescent children by using a systematic training program.
Subjects: 80 mothers and daughters, 10 years or older. Psychotics and drug addicts are excluded.
Methods: Following an educational model rather than a medical one, the participants may vary from those experiencing a seriously troubled relationship to those experiencing a good relationship which they desire to still further improve. The program provides highly structured, finely detailed, systematic instruction in specific skills deemed central to emotional and interpersonal adjustment. Rather than using his skills to solve problems for them, a group leader trains and supervises each parent-child pair to use skills to resolve or to prevent problems. The program can be used simultaneously for remediation and for primary prevention. Therefore, it attempts to erase the usual intellectual-conceptual barrier that exists for most professionals between the two types of programs. Similarly, it seeks to remove the stigmatic-emotional barrier to guidance seeking that exists for many members of the public. The efficacy of the model has been demonstrated in five experiments utilizing randomly assigned no-treatment control groups for married couples, dating couples, and fathers and sons. In addition to a randomly assigned no-treatment control group, it employs a randomly assigned PARD no-training group that will provide suggestion effects, thank-you effects, therapeutic relationship effects, group-support and help, professional guidance, and other effects that are a part of the PARD program and which may contribute to observed changes. This will allow for assessment of skill training. A follow-up evaluation will be made and a booster program will be provided and evaluated.
Duration: September 1975-June 1977.
Cooperating group(s): National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare.

37-LA-2 THE IMPACT OF DEVELOPMENTAL EVENTS UPON THE PERCEPTION OF INTERGENERATIONAL FAMILY SOLIDARITY

Investigator(s): John T. Olson, Ph.D., Psychologist, Camarillo State Hospital, Box A, Camarillo, California 93010.

Purpose: To determine if perceptions of family solidarity are subject to change, particularly during the youth's emancipation from the parent; and to determine some of the factors (social-structural and individual-developmental) that account for such changes.

Subjects: 225 matched parent-offspring dyads. Offspring ranged in age from 15 to 26 (mean age, 19.2); parents' mean age, 44.35. The sample was obtained from a population of 84,000 members of a major metropolitan health care plan.

Methods: This study was concerned with changes in the perception of solidarity between parents and offspring, by both members of the intergenerational dyad, with the course of developmental changes on the part of the adolescent. A model of family solidarity was used which reflected three covarying components: an associational or interactional component, an affectual (or sentiment) component, and a consensual component (similarity of attitudes). Two sources of probable influence upon perception of solidarity were examined. The first was composed of variables defining the social position of the parent and offspring in society and within their family: social class, age, sex, sibship size, and residential propinquity. A second set was composed of events in the lives of the dyad members, events differentiated on the basis of their developmental significance or nonsignificance. The particular developmental tasks and concerns of each dyad member and the corresponding investments or developmental stake in the other dyad member were described. Accordingly four general hypotheses were formulated: (1) perceived family solidarity is influenced by social position, and (2) more by developmentally significant than by nonsignificant events; (3) the influence of those events is dependent upon social position; and (4) the influence of events is greater for those concerned with emancipation.

Findings: The results generally supported the hypotheses. Developmentally significant events in the lives of youth were associated generally with decreased offspring perception of solidarity. For the parents, these events were generally associated with reduced parental perception of associational solidarity only. Emancipation events had greater impact upon parental solidarity perception than did events in the life of the parent. The hypothesized relationship of social position and solidarity perception was also supported. Dyad sex composition consistently influenced solidarity perception with the impact of both events and social position being dependent upon the sex composition. In addition, the analyses revealed that (1) greater solidarity perception within all-female than all-male relationships; (2) greater solidarity perception by both dyad members when they lived either together or in moderately close proximity; (3) the perception of associational solidarity by youth is inversely related to their personal income (with the higher the income, the fewer things they do together); (4) the perception of consensual solidarity by youth is directly related to their household income (with the higher the income, the greater the similarity of their attitudes with those of the parents); and (5) the perception of associational solidarity by parents is related to the age of the offspring and family size (with the younger the offspring or the smaller the family, the more things parent and offspring do together). These findings have significance for family theory concerning the relationship of offspring and parent, for both the developmental and the social-structural perspectives, and for the model of family solidarity.

Duration: 1975-completed.

Publications: (1) Olson, John T. and Smith, David Horton. Leadership roles in a psychiatrically deviant adolescent collectivity. *Psychological Reports*, 1970, 27, 499-510. (2) Smith, David Horton and Olson, John T. Sociometric status in a psychiatrically deviant adolescent collectivity. *Psychological Reports*, 1970, 27, 483-497.

37-LB-1 CHILDREN OF PARENTS WHO WERE IN ORPHANAGES

Investigator(s): John J. Sigal, Ph.D., Research Director, Department of Psychiatry, Jewish General Hospital, 3755 Côte Street, Catherine Road, Montreal, Quebec, Canada H3T 1E2.

Purpose: To examine the second generation effects of prolonged separation from biological parents during childhood within the context of other studies of consequences of parental preoccupation.

Subjects: All the offspring (35 girls and 25 boys, ages 7 to 18) of 18 women and 7 men who had been placed in an orphanage at some time between ages 2 to 11 because of the death of the parent, marriage breakdown, or court order.

Methods: An attempt was made to contact all former residents of an orphanage who were married, had some children in the specified age range, and who were not involved in casework, counselling, or therapy. The parents completed the Langner *et al.* questionnaires relating to the children's behavior, relationship to the child, and relationship to the spouse; and a questionnaire concerning reasons for placement, memories of life in the orphanage, etc. The children responded to selected cards of the Thematic Apperception Test and the Family Interaction Test. Clinical impressions of the family were also recorded.

Findings: Preliminary examination of the data suggests some of the variables associated with poor outcome in the offspring are: placement because of family disruption rather than death of the parent, closer relationship to staff and siblings than to peers in the orphanage, orphanage residents of more than 6 years, no other placement, and a desire to place their own children with members of the family rather than friends now if it were necessary.

Duration: 1971-1976.

37-LC-1 PERSONALITY CHARACTERISTICS OF CHILDREN OF DIVORCED MOTHERS

Investigator(s): S. Dudek, Ph.D., Research Psychologist; and Francoise Tcheng-Laroche, M.A., Research Psychologist, Mental Hygiene Institute, 3690 Peel Street, Montreal, Quebec, Canada H3A 1W9.

Purpose: To investigate whether there are any differences between the personality traits of two groups of children: those being cared for by a mother who has chosen divorce, and those being cared for by a mother on whom divorce was imposed.

Subjects: 45 girls and boys, ages 5 to 12, of recently divorced or separated parents, who presently live with their mother. The sample is derived from middle and higher income French-Canadian families.

Methods: The children and their mothers were recruited mainly through mass media. Interviews were carried out in the subjects' homes by three psychology students. The testing instruments included the Rorschach and structured questionnaire covering demographic variables and information concerning family life, social adjustment, health, and other areas of concern. Comparisons will be made between protocols of the two groups related to such variables as ego strength, anxiety level, sexual identification, and attitudes toward self and others.

Duration: January 1976-September 1976.

37-LF-1 MATERNAL NARCOTIC ADDICTION AND CHILD DEVELOPMENT

Investigator(s): Geraldine S. Wilson, M.D., Assistant Professor, Department of Pediatrics, Baylor College of Medicine, Texas Medical Center, 1200 Moursund Avenue, Houston, Texas 77030.
Purpose: To determine whether exposure to narcotics during pregnancy affects physical growth, development, neurological status, or behavior in preschool years.
Subjects: 120 infants divided into three groups: 30 heroin infants, 30 methadone infants, and 60 control infants.
Methods: The growth, development, neurological status, and behavioral characteristics of three groups of infants are monitored and related to prenatal factors, neonatal morbidity, severity of neonatal withdrawal symptoms, and character of environment. The group assignment of the infant depends on whether the mother is a heroin addict, a methadone addict, or a nondrug user of a similar sociocultural background as the other mothers. The clinical course and development of these infants are compared from birth through the preschool years. The mothers' home environments, prenatal experiences, and complications of labor and delivery are correlated with various facts including the presence of infection or chromosomal abnormality in the infants, the severity of their withdrawal symptoms, and their growth patterns.
Duration: June 1974-May 1977.
Cooperating group(s): National Institute on Alcohol Abuse and Alcoholism; Alcohol, Drug Abuse, and Mental Health Administration; Public Health Service; U. S. Department of Health, Education, and Welfare.
Publications: (1) Wilson, G. S. Somatic growth effects of perinatal addiction. *Addictive Diseases: An International Journal*, 1975, 2(2), 333-345. (2) Wilson, G. S.; Desmond, M. M.; and Verniaud, W. M. Early development of infants of heroin-addicted mothers. *American Journal of Diseases of Children*, October 1973, 126, 457-462.

Childrearing

37-MB-1 PARENT-TEACHER INTERVENTION PATTERNS IN EARLY MORAL TRAINING

Investigator(s): Lester Alston, Ph.D., Associate Professor, Education Department, Baruch College, 17 Lexington Avenue, New York, New York 10010.
Purpose: To study the differences in intervention patterns between minority parents and preschool teachers in the socialization of children in early stages of moral training.
Subjects: Project 1: Black and white parents and teachers of 4- and 5-year-old children. A minimum of 15 parents and 15 teachers will be obtained from Head Start and preschool trainee programs. The control group will consist of a group of women without children and a group of secondary teachers. Project 2: Approximately 40 teachers or institution based surrogates, and 100 parents of 4- and 5-year-old children in the metropolitan New York area.

Methods: This is a study of low income minority mothers' socialization behavior in the early moral training of their children. Research will focus on specific behaviors and circumstances in which the mothers intervene. Intervention patterns of mothers and preschool teachers will be compared to determine the ways intervention patterns of institutional personnel differ from that of parents on the same socialization behaviors. Intervention behavior will be measured through a Q-sort of 60 items (largely drawn from observed classroom incidents and based on 10 areas of concern voiced by minority parents and teachers), the Severity Rating Scale, and a scale of intervention or discipline strategies. The Q-sorts will be administered individually or in groups. Project 1 will extend current work with the intervention sort to a range of metropolitan New York Head Start and similar minority low income preschool settings and to private preschools. Settings will be selected in which parents and teachers share homogeneous middle or lower class family backgrounds in order to isolate the effect of the institution on intervention behavior. Relationships of some racial, educational, and socioeconomic data to intervention behavior will be analyzed. Project 2 will measure the effect of workshop experiences in altering teacher and parent intervention behavior as measured by the sort. Teachers and parents within the same center will first be measured on the sort, then undergo several information and consensus rating seminars, and finally provide a postprogram set of measures. Data will be analyzed by the Mann-Whitney U, rank order correlations, and analysis of variance. It is felt that the scale will have many uses for researchers interested in minority low income family socialization behaviors.
Findings: Pilot findings indicate considerable difference between minority parents and minority preschool teachers.
Duration: October 1975-September 1976.
Cooperating group(s): Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.

37-MB-2 THE MOTHER'S SUPER EGO AND HER CHILDREARING PRACTICES

Investigator(s): W. Edgar Vinacke, Ph.D., Professor, Department of Psychology, State University of New York, Buffalo, New York 14226.
Purpose: To ascertain whether disciplinary techniques vary with the strength of conscience and ego ideal characteristics.
Subjects: 25 mothers of preschool children, ages 22 to 35. Two mothers are black; 23, white.
Methods: A structured interview was conducted with each mother in the home, and tests (ratings of items) of conscience and ego ideal were administered. The interview included questions pertaining to rules, lying. (Were you ever aware that your child tried to deceive you about something?), stealing, altruism (Did your child ever do a favor for you or someone else without being asked?), aggression, modesty, and attitudes and plans (Do you think you had a definite plan for disciplining your child? and Did you deliberately try to instill morals in your child?). The tests given were not standardized but had been used in the investigator's research for the past 4 years.
Findings: Mothers high in conscience have a moral training plan more often than those low in conscience but less often employ terms like "cheat," "lie," and "steal," and less often use physical punishment. Results indicate that high ego ideal is associated with reasoning.
Duration: Summer 1975-Fall 1976.

37-MB-3 SERVICE PROJECT TO DETERMINE RELIABILITY AND VALIDITY OF CHILDREARING QUESTIONNAIRE

Investigator(s): Ray E. Helfer, M.D., Professor, Department of Human Development, College of Human Medicine, Michigan State University, B240 Life Sciences Building, East Lansing, Michigan 48824.
Purpose: To provide various research groups with the opportunity to administer the questionnaire to their research populations; to utilize the feedback for purposes associated with their research; and to provide the service project with data needed for the assessment of the screening instrument.
Subjects: Individuals known to have abused and or neglected their child(ren); individuals who are parents of children known to be developing satisfactorily; and individuals whose histories are unknown.
Methods: Responses to the questionnaire and basic demographic information have been collected by the field study groups from the subjects. Methods are determined by the field study groups according to their own research protocols.
Duration: June 1975-May 1977.

37-MC-1 CURRICULUM DEVELOPMENT FOR PARAPROFESSIONAL TRAINING FOR FOSTER PARENTS

Investigator(s): Carroll E. Kennedy, Ed.D., Professor, Department of Family and Child Development, Kansas State University, Anderson Hall, Manhattan, Kansas 66506.
Purpose: To develop a means of establishing foster parents as paraprofessionals; to establish a model of paraprofessional training for foster parents on a state-wide and later regional basis; and to develop procedures for communication among leaders in social agencies, legislatures, and educational institutions to assist in the establishment of foster parenting as a paraprofessional career.
Subjects: Foster parents and social agency personnel.
Methods: Data will be collected by interviews, group discussions, and by the Delphi Method. The investigator will delineate foster parent activities and conditions necessary for normal growth and development of children from infancy through adolescence. Instructional procedures and materials for training foster parents will be developed, and a parenting manual for the guidance of foster parents will be created. The materials and procedures developed will be evaluated to determine their effectiveness in helping to establish foster parents as paraprofessionals.
Duration: September 1974-June 1977.
Cooperating group(s): Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.
Publications: Kennedy, C. E. *Foundation for curriculum development.* Manhattan, Kansas: Department of Family and Child Development, Kansas State University, June 1975.

37-MC-2 COMPARISON OF THE EFFECTS OF PARENT AND COUNSELOR LEADERS ON PARENT EDUCATION GROUPS

Investigator(s): Bobbie L. Wilborn, Ph.D., Associate Professor; and Della Thomas, Ph.D., Assistant Professor, Department of Counselor Education, College of Education, North Texas State University, Denton, Texas 76203.

Purpose: To determine the efficacy of using trained parents to function as leaders of parent study groups on childrearing.
Subjects: 359 mothers of elementary school age children chosen from eight elementary schools.
Methods: After a 6-week training period for parent leaders, two parent study groups (10 weeks in length) were conducted in each of eight elementary schools. A trained parent led one group, and one group was led by a counselor. There were two control groups for each school: one group was composed of volunteer parents who attended fewer than one-half the sessions; and one was composed of parents who did not register for the study groups and were selected randomly from an alphabetical list of parents whose children attended the school. All parents involved in the study were given a pre- and posttest on the Parent Attitude Survey, which was used in a research study sponsored by the Hogg Foundation. The Parent Attitude Survey yields a score on each of the five variables of confidence, causation, acceptance, trust, and understanding. An analysis of covariance with the pretest scores as the covariant was used to analyze the data.
Findings: On four of the five variables (confidence, acceptance, trust, and understanding) there was no significant difference between the parent led and the counselor led groups. On the variable of causation, there was a difference that was significant at the .05 level of confidence. On all five variables, the difference between the study groups and the control groups was significant at the .01 level. The data supported the use of trained parents as leaders of parent study groups on childrearing and supported the use of parent study groups as a method for increasing parental acceptance of the child's behavior and feelings, mutual trust, confidence in the parental role, mutual understanding, and causation of the child's behavior.
Duration: January 1975-completed.
Cooperating group(s): (1) Faculty Research Grant, North Texas State University. (2) Arlington Independent School District.

37-MC-3 HOME VISITING WITH MOTHERS OF TODDLERS AND THEIR SIBLINGS

Investigator(s): Susan W. Gray, Ph.D., Professor, Department of Psychology, George Peabody College for Teachers, Box 151, Nashville, Tennessee 37203.
Purpose: To devise and empirically test the efficacy of a home visiting program that was family-oriented, with special emphasis on the mother as an educational change agent.
Subjects: 63 mothers with two or more children under age 5, one of whom was between 16 and 24 months old. All subjects were classified as urban, low income, and were black or white.
Methods: The subjects were randomly divided into three groups: an extensive (specific to a family) group, a materials-only group, and a control group. The treatment used followed a specific list of objectives related to the mother as teacher and programmer of the educational environment of her child. The treatment was given for 9 months plus 1 year of monthly contacts for half of the extensive and half of the materials-only groups. Pretests were given, and posttests were given immediately after treatment 1 year later, and 2 years later. The mothers were measured by a test of teaching strategy and the Caldwell Index of Home Stimulation. The children were tested with the Bayley Scales of Infant Development or the Stanford Binet Intelligence Test, as appropriate, a locally devised receptive language test, and a test of basic concepts. The older siblings were tested with the Slosson Intelligence Test. Data were analyzed by repeated measures analysis of variance, where appropriate, plus other procedures required by heterogeneity of the sample.

Findings: At the end of the second posttest, the extensive group mothers were significantly superior on teaching style and the Caldwell Index, although differences were modest. The toddler group was superior on receptive language and on the second posttest, the Stanford Binet Intelligence Test. Results are somewhat more pronounced for the second rather than the first posttest.
Duration: October 1972-September 1976.
Cooperating group(s): (1) National Institute of Education, U. S. Department of Health, Education, and Welfare. (2) Joseph P. Kennedy, Jr. Foundation.
Publications: An interim report through the second posttest is available from the investigator.

37-MC-4 COMPARING WAYS OF ALTERING PARENT-CHILD INTERACTION

Investigator(s): Kate L. Kogan, Ph.D., Professor, Department of Psychiatry and Behavioral Sciences; and Nancy B. Tyler, M.O.T., Assistant Professor, Rehabilitation Medicine, School of Medicine, University of Washington, Seattle, Washington 98195.
Purpose: To record and analyze videotaped parent-child interactions and to use these data as the basis for guiding parents in systematically modifying their interactions in a series of weekly bug-in-the-ear instruction sessions; to compare the effectiveness of a program which combines group and individual teaching; and to compare both with long-term changes in children who haven't participated in the program.
Subjects: 60 children, ages 3, 4, and 5, who are mildly to moderately delayed in some aspect of development; and their parents.
Methods: Subjects were divided into three groups: 20 parents who receive individual sessions only; 20 who experience half individual bug-in-the-ear and half group instruction and videotape review sessions; and 20 comparison subjects who will be observed only at the beginning and end of the year. Measures, taken at the beginning and end of the year, include: behavior descriptions from referring agency, Washington Symptom Checklist, Maryland Parent Attitude Survey, and Minnesota Child Development Inventory. Experimental group subjects receive baseline observations, six instruction sessions, baseline observations, two more instruction sessions 3 months later, and final baseline observations at the end of the year. Observational data will be analyzed using the Interpersonal Behavior Constructs. Change will be measured by using each dyad as its own control with analysis of variance being completed on the single behavior frequencies.
Duration: May 1975-April 1978.
Cooperating group(s): Bureau of Community Health Services, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare.

37-MC-5 HOME AND HOSPITAL SUPPORT FOR MATERNAL ATTACHMENT

Investigator(s): Earl S. Schaefer, Ph.D., Professor; Karl E. Bauman, Ph.D., Associate Professor; and Earl Siegel, M.D., Professor, Department of Maternal and Child Health, School of Public Health, University of North Carolina, Chapel Hill, North Carolina 27514; and Minta Saunders, Project Field Director, Mother-Infant Project, P. O. Box 3508, Greensboro, North Carolina 27402.

Purpose: To test the hypotheses that (1) health personnel might contribute substantially to primary prevention of child mental health by providing increased support for maternal attachment and maternal care; and (2) programs of increased contact between mother and infant in the hospital after delivery, and of more support and counseling for the mother during the first 3 months, can positively influence maternal attachment and maternal care.
Subjects: 300 women (50 subjects in each of six groups) who receive prenatal care from the Guilford County Health Department and who are delivered at Moses H. Cone Memorial Hospital in Greensboro, North Carolina.
Methods: The research design evaluates the effects of the combination of the hospital intervention and of the home intervention. The control group receives neither intervention. Two groups, composed of women whose infants were placed in the observational nursery for up to 24 hours after delivery, have been added to the original research design. One of these groups receives the remainder of the hospital intervention and the home intervention. The other group receives no intervention. The data consist of interviews with the mothers, ratings of the mothers, and both filmed and unfilmed observations of the mothers with their infants.
Duration: June 1975-June 1978.

37-MC-6 BEHAVIORAL CURRICULUM FOR LOW INCOME FAMILIES

Investigator(s): Rosa Aguilu, M.S.W., Project Director, Child and Family Services of Connecticut, Inc., 1680 Albany Avenue, Hartford, Connecticut 06105.
Purpose: To design and evaluate the effectiveness of a family life education program for low income families.
Subjects: First year sample: two groups totalling 22 parents, male and female. Second year sample: 24 groups, totalling 240 low income parents, male and female.
Methods: Pre- and postinterviews are administered to obtain demographic data, attitudes toward parenting, and typical child handling techniques. Picture taking by parents, used to motivate attendance and give concrete demonstration of the techniques of observation, positive and negative behavior, and reward, will also produce photographs that can be used as a projective technique to illustrate attitude change.
Duration: October 1975-September 1977.
Cooperating group(s): Hartford Foundation for Public Giving.

SOCIOECONOMIC AND CULTURAL FACTORS

37-NA-1 STUDY OF REGIONAL DIFFERENCES IN CHILDREN'S DEVELOPMENT

Investigator(s): National Children's Bureau, 8 Wakley Street, Islington, London, England EC1V 7QE. Address correspondence to: Gillian Pugh, Senior Information Officer, National Children's Bureau.
Purpose: To examine the extent and nature of the differences that have emerged between children living in different parts of the country; and to investigate the extent to which these measures of development can be related to differences in local economic and social conditions.
Subjects: 14,848 children, of whom 92 percent were followed from a prenatal study.
Methods: The main source of data is that on the 11-year olds in the National Child Development Study (NCDS) (see Study 37-XD-5 in this bulletin), which included descriptive data about the child, his family, his home background, and his school. The project is considering three aspects of children's development: their educational attainment, environment, and health. From the NCDS data already collected, the project is using two measures of educational performance: scores on a reading test, and scores on a math test. An initial analysis is examining differences between regions and within regions using variables such as social class, family size, children with a chronically sick parent, the age of the mother at birth, etc. The data will also be analyzed against the Institute of Municipal Treasurers and Accountants information, looking, for example, at expenditure and at pupil/teacher ratios and their relationship to educational attainment. The NCDS data may be used to develop a simple index of ill health, considering the relationship between the child's health, the health of the parents, and the locality. The data describe such factors about the child as whether he lives in overcrowded conditions, has access to hot water, etc.
Duration: 1974-1976.
Cooperating group(s): Centre for Environmental Studies.

37-NA-2 SPECIAL NEEDS OF CHILDREN IN INTERNATIONAL COMPARISON

Investigator(s): Walter Friedlander, Ph.D., Professor Emeritus, Department of Social Welfare, University of California, Berkeley, California 94720. Address correspondence to: 6437 Regent Street, Oakland, California 94618.
Purpose: To investigate children's problems in various international settings.
Subjects: Children of foreign workers in several European countries.
Methods: Investigations include problems of schools, linguistic problems, delinquency, skipping school, health problems of small children, and problems of children in minority groups in the United States and other countries. Research techniques include observation and interviews.

Findings: There are urgent needs of improved social services for children of foreign workers employed in most European countries, in Africa (especially in the emergency conditions south of the Sahara), and in Bengladesh and India.
Duration: 1973-1977.
Publications: Findings will be published in the second edition of *International Social Welfare*. New York: Prentice-Hall, Inc. (in press).

37-NB-1 OCCUPATIONAL VALUES IN BRAZIL: A COMPARISON OF TWO GENERATIONS

Investigator(s): A. L. Angelini, Ph.D., Director; and A. P. R. Agatti, Ph.D., Professor, Institute of Psychology, University of Sao Paulo, C. P. 11454, Sao Paulo, Brazil.
Purpose: To study similarities and differences in occupational values of husbands and wives and of two generations, parents and children.
Subjects: 40 school children (20 girls and 20 boys) and their parents. Half the children are 10 years old; the other half, 14 years old.
Methods: Spearman's coefficients of correlation were computed between each child and parent. The most chosen and least chosen values were determined in each group.
Findings: Strong similarities in values were found between husbands and wives and between father and son when the son is 14 years old.
Duration: 1967-completed.
Publications: Presented at the XXI International Congress of Psychology, Paris, July 1976.

37-NE-1 RURAL CHILDREN UNDER SIX: AN APPROACH FOR SUPPLEMENTING HOME EXPERIENCES BASED ON AN ANALYSIS OF ENVIRONMENTAL CHARACTERISTICS

Investigator(s): Jean D. Dickerscheid, Ph.D., Professor, Department of Family Relations and Human Development, Ohio State University, 131 Campbell Hall, 1787 Neil Avenue, Columbus, Ohio 43210.
Purpose: To study the home environments of rural children, how these environments affect early school performance, and what can be done to further enrich the home environments in order to increase the probability of success in school.
Subjects: 90 families and their first graders. Children are equally divided by sex. Mothers of the families had been the major caregivers to the children being studied since birth. All subjects lived in low density, low income Ohio counties.
Methods: The design of this investigation involved parent interviews, home observations, and performance tests which were conducted in the subjects' homes. Instruments used included an interview and observation schedule comprised of five segments: (1) Demographic Index, (2) Isolation Indicators, (3) Expectation Questionnaire, (4) Reward Orientation Scale, and (5) Dietary Adequacy Assessment. School achievement was measured by the S-U Scale designed to assess achievement in social, emotional, and physical areas as well as in the cognitive area. A least squares analysis of variance was performed on the data. Home environment enrichment materials were also developed and field tested.
Findings: School performance of rural children was affected by maternal attitude, reward systems, and socioeconomic status. Maternal satisfaction with the child's school explained the most variance with school performance scores. Mother-child agreement on the Reward Orientation Scale was related to school performance at the $p. < .01$ level of confidence. Subjects with higher socioeconomic status performed better in school than subjects with lower socioeconomic status.

Duration: July 1971-completed.
Cooperating group(s): Ohio Agricultural Research and Development Center.
Publications: (1) The home environment enrichment materials are available under the title, "Activities for Preschool-Age Children," from the Office of Information, Ohio Cooperative Extension Service, Ohio State University, 2120 Fyffe Road, Columbus, Ohio 43210. (2) Information on the research is available from the investigator.

37-NG-1 THE IMPACT OF MODERNIZATION ON TRADITIONAL POLYNESIAN INTERACTION PATTERNS: THE INFLUENCE OF A WESTERN EDUCATIONAL SYSTEM

Investigator(s): Nancy B. Graves, Ph.D., Co-director; and Theodore D. Graves, Ph.D., Co-director, South Pacific Research Institute, Inc., Opanuku Road, R. D. 1, Henderson, Auckland 8, New Zealand.
Purpose: To establish traditional patterns used in Polynesian homes; and to assess developmentally changes in these patterns as the child progresses through a Western school system.
Subjects: 500 Cook Island, Maori school children, ages 5 to 14, both sexes, in Grades 1 (equivalent to United States kindergarten), 3, 5, and Forms 1 and II (equivalent to United States grades 6 and 7). New entrants (N = 55) are observed at home and in school, and extensive data are collected on 11- to 14-year olds (N = 125).
Methods: This project is part of a larger study on Polynesian adaptation and Pakeha (white New Zealander) adjustment to migration from the Cook Islands to Auckland, New Zealand. Pakeha comparison groups will illustrate developmental trends in the same interpersonal strategies for New Zealand school children. The research in this study involves a wide range of techniques: (1) ethnographic observation; (2) systematic observation in both home villages and schools of children before and after they enter Grade 1; (3) experimental techniques aimed at eliciting interpersonal strategies (such as cooperation/competition, rivalry generosity, equalization maximization); (4) systematic observations made during experiments; (5) projective techniques eliciting social problem solving; and (6) interviews with parents. Correlation, step-wise regression, path analysis, and group-differences tests will be used to analyze the data.
Findings: At ages 5 to 6, when European children are considered to be quite self-centered, Cook Island children are highly generous in their interpersonal strategies: 40 to 50 percent of both sexes give more than they take in an experimental situation. With each year in school, however, rivalrous responses increase. By Form II, over 60 percent of the boys and 40 percent of the girls are rivalrous, while only between 10 and 15 percent are generous. This is similar to rates found among Cook Island adults — parents of these children. Rivalry is highly related to nuclear family structure, absence of adoptive siblings, neat grooming and school uniform, and academic marks among children. Among adults, this strategy is related to various measures of Westernization, such as occupational level, education, family structure, etc. In experiments dealing with ability to cooperate, it was found that a tendency to rivalry interfered with effective cooperation, although among children with high academic marks, this was overcome more often than among children average or below in academic marks.
Duration: February 1972-September 1977.
Cooperating group(s): (1) Royal Society of New Zealand. (2) Department of Anthropology, University of Auckland. (3) Department of Education, The Cook Islands. (4) Board of Education, Auckland, New Zealand.
Publications: Research reports are available from the investigator.

EDUCATIONAL FACTORS AND SERVICES

General Education

37-OA-1 EVALUATION OF THE FIELD TEST OF PROJECT INFORMATION PACKAGES

Investigator(s): Marian S. Stearns, Ph.D., Psychologist, Education Research Department, Stanford Research Institute, 333 Ravenswood Avenue, Menlo Park, California 94025; and Donald P. Horst, Ph.D., Program Director, RMC Research Corporation, Suite 400, 2570 West El Camino Road, Mountain View, California 94040.

Purpose: To assess the viability of Project Information Packages (PIPs) as a method of disseminating exemplary compensatory reading and mathematics education programs for kindergarten through 12th grade.

Subjects: Approximately 1,550 students were chosen from 17 school districts. The subjects were divided into six programs: (1) 500 first graders, (2) 40 per grade level of grades kindergarten through 6, (3) 20 per grade level of grades kindergarten through 6, (4) 135 third and fourth graders, (5) 300 eighth graders, and (6) 200 seventh through ninth graders.

Methods: Project Information Packages are complete management information and "how to" kits to enable staff in school districts to replicate a reading and/or math project previously proven successful in a similar school district. PIPs are evaluated to determine if school district staff can implement the original exemplary program through use of the information packet, and to determine if replication of the projects will produce achievement gains as good as those demonstrated by original exemplary projects described in the packages. To evaluate the use and effectiveness of the PIPs, attitude questionnaires were administered to administrators, project and nonproject teachers; open-ended informal interviews were held with directors and instructional staff; and specified PIP elements were observed in instructional situations. The Metropolitan Achievement Test, Crandell's IAR Attitude Inventory, and tests for intellectual achievement and responsibility were given to students in the programs. During the year of implementation of programs, frequent visits were made by field staff who were specialized on each PIP, and tests were administered to the students in October and April.

Findings: Six exemplary projects were analyzed by the RMC Research Corporation and found to be effective and potentially replicable, and six PIPs were developed based on them. The exemplary projects were (1) Project Catch-Up, Newport-Mesa Unified School District, Newport Beach, California; (2) Project Conquest, School District 189, East St. Louis, Illinois; (3) High Intensity Tutoring, School District of the City of Highland Park, Highland Park, Michigan; (4) Intensive Reading Instructional Teams, Hartford Public Schools, Hartford, Connecticut; (5) Programmed Tutorial Reading, Davis County School District, Farmington, Utah; and (6) Project R-3, San Jose Unified School District, San Jose, California.

Duration: July 1974-December 1976.

Cooperating group(s): Office of Planning, Budgeting, and Evaluation; Office of Education; U. S. Department of Health, Education, and Welfare.

37-08-1 CAREER DEVELOPMENT PROGRAM

Investigator(s): Patrick Corbett, B.S., Director, Career Development Program, Kirtland School District, 9140 Chillicothe Road, Kirtland, Ohio 44094.

Purpose: To foster in each child a healthy respect for work and also for other people; to provide the opportunities for each student to learn more about himself and the world of work surrounding him; and to provide each student with a variety of experiences that will prepare him to participate successfully in the working world.

Subjects: 1,157 students enrolled in grades kindergarten through 10. The students are from a rural-suburban community in Ohio and are from lower middle to upper middle class families.

Methods: Two major themes for Career Motivation are used in the elementary grades: "Living and Working Together" (grades kindergarten to 3) and "Living and Working in Our Changing World" (grades 4 to 6). To integrate career education into the classroom, teachers utilize school and community personnel, field trip experiences, and a wide variety of audiovisual resources. To tie field trips into the curriculum, extensive classroom preparation and follow-up are made for each trip. Children also participate in simulated marketing experiences. Career Orientation is used in 7th and 8th grades. Each 7th grader is tested on the Lorge Thorndike Intelligence Tests and the Iowa Test of Basic Skills, which are administered by the guidance department. Individual and small group interpretation sessions provide each student with some assessment of his/her aptitudes and abilities. Classroom discussions are centered on individual differences in aptitudes and abilities. The 7th graders also participate in a 3-day trip around the state. Each 8th grader participates in the Ohio Vocational Interest Survey, and classroom work is centered on interpretation of the results. Each student then researches two of his top interest areas with given guidelines. In conjunction with research reports and high school scheduling, each 8th grader tours vocational school facilities. Parent conferences follow to discuss scheduling and career planning. The Career Exploration component in grades 9 and 10 includes classroom work through integration of career information and career development concepts into the curriculum. All 9th graders complete a research project in which they write a research paper on an occupational area, following the criteria for formal research. In conjunction with the research, each student has an opportunity to spend school time at a training site which would prepare him for the occupation being researched. Each 9th grader is tested on the Lorge Thorndike Intelligence Tests and the Differential Aptitude Test Battery. The Ohio Vocational Interest Survey is administered to each 10th grader. Individual and small group interpretation sessions are conducted by counselors. While each student participates in guidance sessions in planning future educational programs, the parents of each 10th grader also participate in individual sessions with counselors concerning the selection of their child's educational program and career planning. A random sample of students, selected from the program, was surveyed and compared to a sample of students not in the program.

Findings: Elementary students in the program display a greater respect for work and workers, demonstrate a greater awareness of the world of work, and seem more strongly motivated to learn more about the world of work. In grades 7 and 8, the students have a more positive attitude toward school and work and utilize a wider range of sources of career information. Students in grades 9 and 10 spend more school time observing and working with adults in occupational areas of their interest.

Duration: September 1972-continuing.

Cooperating group(s): Division of Vocational Education, Ohio State Department of Education.

37-OB-2 FIELD TRIAL OF DISCOVER, A COMPUTER BASED CAREER GUIDANCE SYSTEM

Investigator(s): JoAnn Bowlsbey, Ed.D., Director; and Jack Rayman, Ph.D., Associate Director, Project DISCOVER, Carroll Hall, Western Maryland College, Westminster, Maryland 21157.
Purpose: To study the student reaction to the newest of the computer based career guidance systems; and to assess its effectiveness.
Subjects: 92 students chosen from one junior and two senior high schools. The subjects were evenly distributed by grade level (7 to 12), sex, and reading ability (measured by the Iowa Test of Basic Skills).
Methods: DISCOVER is a systematic career guidance program designed to enhance normal career development for grades 7 through 12. It is a combination of (1) originally developed interactive dialogue and simulations, (2) instruments and tools used by permission of other developers, and (3) both originally developed and borrowed data files. The student uses DISCOVER through interactive dialogue at television-like terminals placed at different spots in the school, connected by phonelines to an appropriate computer anywhere. In the first treatment, subjects will use all 21 modules of DISCOVER in order for approximately 20 periods over 8 weeks. A DISCOVER staff member will observe students while they use the program and will interview them for 5 to 10 minutes after each use. In the second treatment, subjects will use only part of the program for approximately 10 periods over 8 weeks. They will also be observed by a staff member while using the system. The Treatment 2 subjects will complete a short questionnaire after each use of the system; complete a longer questionnaire at the end of the total experience; and complete three tests: Super's Career Development Inventory, ACT's Assessment of Career Development, and an instrument to measure decision making skills. A selected subsample of these students will be interviewed for 15 minutes by a staff member at the end of the total experience. Control students who do not use the computer program will complete the same tests as subjects in Treatment 2. Counselors who have students using the program will participate in a service training program and provide a monthly report related to the results of the system's installation. The report will cover (1) the number of students visiting counselors after using the program, (2) topics covered in the interviews, (3) differences, if any, noted in the counselor's work, and (4) any student feedback received. Counselors and administrators will participate with a staff member at the end of the field trial. Subjects' parents will fill out a questionnaire.
Duration: March 1976-May 1976.
Cooperating group(s): Baltimore Public School System.

37-OB-3 SOCIAL INTERVENTION IN PUBLIC SCHOOLS

Investigator(s): Lawrence H. Gary, Ph.D., Institute for Urban Affairs and Research, Howard University, 2935 Upton Street, N.W., Washington, D. C. 20008.
Purpose: To examine tasks and techniques employed by black school social workers in providing social services to black students in the public school.
Subjects: 178 black school social workers (mean age, 42) from seven public school districts. Eighty-two percent of the social workers were female and had a Master's degree.
Methods: This investigation is exploratory in nature. A series of personal interviews will be used to gather the data. Selected variables include professional participation, career commitment, client orientation, perceived autonomy, organizational socialization,

workload, school compatability, and tasks and techniques. Data analysis will consist of central tendency measures, factor analysis, and multiple classification analysis. The findings from this study will be used to construct a model for the delivery of mental health services to children.

Findings: The primary technique used involved casework services to individual children with little or no innovative techniques. Situational factors of caseload, number of schools served, etc. had a greater influence on treatment strategies than attitudinal or organizational variables.

Duration: June 1973-February 1976.

Cooperating group(s): (1) National Institute of Mental Health, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare. (2) Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.

37-OB-4 AN INVESTIGATION OF PUPIL CONTROL IDEOLOGY AND PERSONALITY CHARACTERISTICS OF HIGH AND LOW ACHIEVING PUPILS

Investigator(s): Lyn S. Martin, Ph.D., Consultant, Center for Open Education, Box U-32, University of Connecticut, Storrs, Connecticut 06268.

Purpose: To determine if an interaction between teacher style and certain noncognitive dimensions of students is related to pupil achievement outcomes.

Subjects: 24 fifth and sixth grade teachers; and 240 of their pupils selected from cooperating schools.

Methods: The variables under examination in this study were (1) Pupil Control Ideology (PCI): The degree to which the teacher believes that control must be exercised over the behavior and learning of students; (2) Dependence-Proneness: The degree to which students rely on teacher direction, supervision, and support in their work; (3) Intellectual Achievement Responsibility (IAR): The degree to which a student believes that he is responsible for his own successes and failures in intellectual-academic achievement situations; and (4) Teacher Perceived Competency (TPC): A teacher judgment measure in which students are assessed as either working at capability or below capability. The problem generally stated is: What is the relationship of the teacher's pupil control ideology to the achievement outcomes of pupils with differing intellectual achievement responsibility orientations and dependence-proneness? The data were analyzed to determine relationships among variables and differences related to teacher and pupil characteristics. It was hypothesized that the more internal and independent pupils would achieve a better level of competency with teachers of lower control ideology, and that pupils with more external control orientations and greater dependence-proneness would show greater competency with teachers having control ideology. Eighty teachers were asked to complete the Pupil Control Ideology Form including demographic data. From these responses, the 12 highest control and 12 lowest control teachers were selected for the study (a t-test of differences between the two groups was significant beyond the .001 level of confidence). These 24 teachers were each asked to select five achieving and five underachieving students from their classrooms (as defined by the Teachers Perceived Competency Instrument validated for this study). These 240 pupils were administered the Intellectual Achievement Responsibility Questionnaire and the Dependence-Proneness Questionnaire, of which there were 223 usable returns (113 achieving pupils and 110 underachieving pupils). Two-way analysis of variance was performed with TPC and PCI as independent variables and IAR and dependence-proneness as the dependent variables in two separate analyses. A Pearson product-moment correlation of teacher PCI and teacher demographic variables was also tested.

Findings: The results of this investigation did not confirm the hypothesized relationship and interaction effects of teacher control ideology and pupil personality characteristics. Conclusive findings were (1) Across the board, high dependent-prone pupils were high achievers based on the TPC measure. (2) Across the board, findings support other research in the area that highly internal pupils were higher achievers (IAR and TPC measures). (3) As measured by the IAR and dependence-proneness questionnaires, there was a high correlation between internality and dependence-proneness. (4) Analysis of teacher control ideology and demographic data revealed that age, length of time teaching, and sex were significantly related to teacher control ideology. Older teachers, more experienced teachers, and males were higher scores on the PCI (high teacher control). The investigation concluded that, while dependence-proneness and internality were found to be related to competence, the hypothesized interaction effects may not have been revealed because of certain limitations of this study. If pupils selected for comparison had *always* been in either high or low control school situations, the effects of schooling may have been more apparent. In addition, the attributes of dependence and internality are usually stabilized by the 5th or 6th grades, and 1 year with a particularly controlling or noncontrolling teacher may not make much difference. The results also indicate that teachers may be continuing, even in so-called low control classrooms, to reward and perpetuate the conforming, dependent child. The point appears to be that educational systems continue to shape and structure personalities of students without accommodating to them.
Duration: March 1975-May 1976.

37-OD-1 A PRIMARY PREVENTION DRUG EDUCATION PROGRAM FOR SCHOOL CHILDREN

Investigator(s): Kathryn Starkey, Ph.D., Associate Professor; and Thomas Lopez, Doctoral Student, Department of Educational Psychology, Pennsylvania State University, Capitol Campus, Middletown, Pennsylvania 17057.
Purpose: To see if value sharing training for teachers made a change in their classroom behavior and/or on student's self-esteem and/or risk taking attitudes.
Subjects: 157 fifth and sixth graders mainly from lower class, white, blue collar families in a rural area.
Methods: A repeated measures design was used in this investigation. Teachers were given value sharing training (based on a program developed for the Coronado School District of California). The training is more than values clarification and involves teaching of strategies plus supervision in the classroom. Pre- and posttests were administered using the Coopersmith Test for Self-Esteem, the Carney Test for Risk Taking Attitudes, and the Observational Form for Teacher Behavior. The teachers involved in this study taught in open classroom situations.
Findings: Changes were significant for both Coopersmith and Carney *except* when analyzed for teachers trained vs. nontrained. No differences were found on the Observational Forms for Teacher Behavior.
Duration: January 1975-August 1975.
Cooperating group(s): (1) Susquenita School District. (2) Addictions Prevention Laboratory, Pennsylvania State University. (3) Tri-County Council on Addictive Diseases.

37-OF-1 SOCIALIZATION CORRELATES OF ACADEMIC ACHIEVEMENT IN ADOLESCENT MALES AND FEMALES

Investigator(s): Joan P. Bean, Ph.D., Assistant Professor, Department of Psychology, University of Massachusetts, Amherst, Massachusetts 01002.

Purpose: To explain differential performance of males and females in math and science courses.
Subjects: Equal numbers of male and female 9th and 11th graders enrolled in high school math and science courses.
Methods: Data collection was completed by analyzing students using classroom observations, math and science achievement test scores, determining Piagetian cognitive level, and interest test scores. Separate parametric analysis of variance comparisons and multiple regression will be used on the data to determine differences.
Duration: January 1975-January 1976.

37-OF-2 THE VISUAL AURAL DIGIT SPAN TEST AS A SCREENING INSTRUMENT FOR SCHOOL BEGINNERS

Investigator(s): Elizabeth M. Koppitz, Ph.D., School Psychologist, Board of Cooperative Educational Services, Yorktown Heights, New York 10598. Address correspondence to: R.F.D. 1, Box 200, Stanwood, Mt. Kisco, New York 10549.
Purpose: To evaluate the ability of the Visual Aural Digit Span Test (VADS) to predict second, third, and fourth grade achievement.
Subjects: 122 girls and boys from mainly lower middle class backgrounds who are nearly finished kindergarten.
Methods: All the children were tested with the VADS at the end of the kindergarten year. The children's achievement will be assessed by means of standardized group tests, and VADS test scores and achievement test scores will be correlated.
Findings: Preliminary research with learning disabled pupils, ages 7 to 12, showed significant relationships between VADS scores and spelling, reading, and arithmetic achievement.
Duration: May 1972-November 1976.

37-OF-3 ELEMENTARY SCHOOL CLIMATE AND SCHOOL ACHIEVEMENT

Investigator(s): Wilbur B. Brookover, Ph.D., Professor; John H. Schweitzer; Charles H. Beady, Jr.; Patricia Flood; and Joseph Wisenbaker, Urban and Metropolitan Studies, Michigan State University, W 142 Owen Hall, East Lansing, Michigan 48824; and Jeffrey M. Schneider, School of Education, Brown University, Providence, Rhode Island 02912.
Purpose: To analyze the relation of school social climate variables to mean academic achievement in random samples of Michigan public elementary schools with racial and socioeconomic status composition controlled.
Subjects: Fourth and fifth grade students in 91 randomly selected public elementary schools; their teachers; and principals.
Methods: Questionnaires were administered by the research staff to students, teachers, and principals. Fourteen climate variables developed in previous research were verified by factor analysis. Multiple regression analysis was used to test the hypothesis that climate variables explain between school variance in achievement over and above that explained by racial and socioeconomic status composition.
Findings: Climate variables explain a significant portion of the between school variance in achievement after effect of composition is removed. This is particularly true in majority black schools. The composition and climate variables combined explain more than 70 percent of the between school variance in achievement in a statewide sample and a sample

of black schools. Nearly all of this variance is explained by climate variables when placed in regression before composition.
Duration: Summer 1974-Fall 1976.
Cooperating group(s): (1) National Institute of Education, U. S. Department of Health, Education, and Welfare. (2) Michigan Department of Education.
Publications: A report will be submitted to the National Institute of Education and published by Michigan State University.

37-OG-1 THE EFFECTS OF AN AFFECTIVE AND CREATIVE EDUCATION WORKSHOP ON TEACHER ATTITUDES AND SUBSEQUENT CHANGES IN STUDENT CREATIVITY

Investigator(s): Ellen Joan Gruber, Ph.D., Assistant Professor, Department of Early Childhood Education, School of Education, West Georgia College, Carrollton, Georgia 30117.
Purpose: To ascertain the effects of an affective and creative education workshop on teacher attitudes and the subsequent changes in student creativity after the teachers' change in attitude.
Subjects: 18 first grade teachers from Carrollton city schools; and 100 first graders evenly distributed among the teachers' classes.
Methods: Design of this investigation involved both the teachers and students being pre- and posttested. The teachers were tested with the Rokeach Dogmatism Scale before and after a 2-day workshop in affective education. Each teacher gave selected students the Torrance Test of Creative Thinking (TTCT) and the I Feel Me Feel Test. After the workshop, the teachers were monitored once a week for an hour during an affective curriculum period in which they implemented an affective curriculum with their classes. Data were analyzed by using a paired difference t-test with the Rokeach scores and by using an analysis of covariance with the TTCT scores.
Duration: August 1975-completed.
Cooperating group(s): West Georgia College Research Foundation.

37-OG-2 SCHOOL POLITICAL BEHAVIOR RESEARCH PROJECT

Investigator(s): Lee H. Ehman, Ed.D.; and Judith A. Gillespie, A.B.D., Political Science, Co-Principal Investigators, Social Studies Development Center, Indiana University, 513 North Park, Bloomington, Indiana 47401.
Purpose: To map school political life; and to determine relationships between school organization and students' political attitudes and behaviors.
Subjects: 1,500 male and female high school students, ages 14 to 18, who were randomly chosen from 13 midwestern high schools.
Methods: The major thesis of this research was that schools are micro-political systems in their own right, and, as such, have some demonstrable impact on students' political attitudes and behavior. Three hypotheses were developed: (1) the nature of that impact varies across different types of schools, and among students in the same school; (2) four significantly different types of school political systems (elite, bureaucratic, coalitional, and participant) can be linked to significantly different student political attitudes and behaviors; and (3) the quantity and quality of students' information and position within school political settings will affect the impact of school political types on student attitudes and behaviors. These hypotheses were explored in a 15-month, cross-sectional study of 13 schools. Questionnaire, interview, and direct observation instruments measur-

ing student, teacher, and administrator behavior were used in mapping the school as a political system and determining its impact on students. Data were collected on common organized settings through which activities and interaction occur, and on students' political attitudes and behavior. Three attitudes were studied: trust, integration, and confidence.

Findings: There are both school effects and group effects on students' political attitudes and behaviors.

Duration: August 1973-January 1976.

Cooperating group(s): (1) National Institute of Education, U. S. Department of Health, Education, and Welfare. (2) Indiana University, Bloomington.

Publications: (1) Ehman, L. H. and Gillespie, J. A. School political life. National Society for the Study of Education, *Yearbook on the politics of education*, 1976. (2) AERA and APSA convention papers are available from Dr. Ehman.

37-OG-3 DEVELOPMENT OF AN IDENTIFICATION PACKAGE FOR PRESCHOOL SOCIAL WITHDRAWAL

Investigator(s): Charles R. Greenwood, Ph.D., Project Director; Hill M. Walker, Ph.D., Center Director; Hyman Hops, Ph.D., Program Director; and Nancy Todd, B.A., Principal Investigator, Center at Oregon for Research in the Behavioral Education of the Handicapped, University of Oregon, 1590 Willamette Street, Eugene, Oregon 97401.

Purpose: To develop and validate teacher administered screening measures; to generate normative data on interaction rates and styles using behavior observation measures; to develop norms on incidence data; and to develop a materials package for screening with normative data and prescription treatment suggestions.

Subjects: 490 children, ages 2 to 7, drawn from parochial, cooperative community and private preschool and day care facilities (approximately 29 classrooms).

Methods: The project is a descriptive study using behavioral observation instruments; e.g., the Peer Interaction Recording System (Hops, Todd, Garret, and Nicholes, 1975) and the Interaction Recording System (Todd, 1976). Teacher assessments of social interaction skills were made using a teacher ranking form and the Walker Problem Behavior Identification Checklist. A predictive study was completed looking at the relationship between teacher measures as predictors and observed interaction rate as the criterion.

Findings: The relationship between teacher ranking measures and behavioral observation data appeared strong enough to involve teacher methods as a first step in screening.

Duration: September 1975-September 1978.

Publications: Greenwood, C. R.; Walker, H. M.; Todd, N.; and Hops, H. Preschool teacher's assessments of social interaction: Predictive success and normative data. Report #26, Center at Oregon for Research in the Behavioral Education of the Handicapped, University of Oregon, March 1976. The report is available from Dr. Greenwood.

37-OG-4 CIRCO: DEVELOPMENT OF PRESCHOOL AND FIRST GRADE MEASURES FOR CHILDREN FROM SPANISH BACKGROUNDS

Investigator(s): Roy Hardy, Ph.D., Assistant Director, Southern Regional Office, Educational Testing Service, Suite 1040, 3445 Peachtree Road, N.E., Atlanta, Georgia 30326.

Purpose: To develop an array of assessment instruments (CIRCO) that is sensitive to the specific needs of young Spanish-speaking children as they begin the formal education process in the United States.

Subjects: 7,500 children, ages 4 to 6, who are of Cuban-, Mexican-, and Puerto Rican-American backgrounds in the Northeast, Midwest, West, and South regions of the United States.
Methods: A validation study is under way to determine the most appropriate language to use in testing the bilingual child. The children's English and Spanish language proficiency was determined and the children were randomly assigned to test administrations using only Spanish, only English, or both languages for instructions. The measures will be pilot tested (informal administration) and field tested for validity and reliability and norms.
Duration: July 1975-June 1978.
Cooperating group(s): (1) Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare. (2) CIRCO Cultural Advisory Committee, a group of Spanish-American educators. (3) CIRCO Options Panel, test development specialists and linguists from external organizations who advise Educational Testing Service.
Publications: Data and results will be available as research reports published by the Educational Testing Service.

37-OJ-1 FRIENDLY INTRUDERS: CHILD CARE PROFESSIONALS AND FAMILY LIFE

Investigator(s): Carole Joffe, Ph.D., Assistant Professor, Graduate School of Social Work and Social Research, Bryn Mawr College, Bryn Mawr, Pennsylvania 19010.
Purpose: To study emerging trends in the professionalization of child care.
Subjects: Child care staff from public schools; and parent-clients in public school early childhood education programs. Half of the subjects were white, middle class parents; half were black, low income parents.
Methods: This study focused on encounters between child care staff located in public schools and parents. Data were collected from site observations at nursery schools, staff meetings, and interviews with parents and staff. Different definitions of child care services held by parents and professionals, and the negotiations among them, were examined to produce a new definition.
Findings: There is pressure on early childhood professionals to adopt a cognitive curriculum and to abandon a socioemotional one.
Duration: 1971-completed.
Publications: Joffe, C. *Friendly intruders: Child care professionals and family life.* Berkeley: University of California Press, 1977.

37-OK-1 STUDENT MENTAL HEALTH IN DESEGREGATED SCHOOLS

Investigator(s): Jane R. Mercer, Ph.D., Professor, Department of Sociology, University of California, Riverside, California 92502.
Purpose: To identify the educational and social processes in multiethnic elementary schools that are associated with positive educational and mental health outcomes as measured by academic achievement, self-concept, anxiety, locus of control, educational and occupational expectations, attitudes toward school, stereotyping of other ethnic groups, positive identity with own ethnic group, and cross-ethnic and interethnic sociometric choices.
Subjects: A random sample of 12 fifth and sixth grade students per ethnic group per school was chosen from 13 elementary schools in California.

Methods: Using a theoretical model based on the theory of equal status contacts, systematic case studies will be conducted to compare the learning environments in the schools. Ten institutional processes, which are considered to be central to producing quality and equity in educational outcomes, have been identified as (1) objective based testing rather than norm referenced testing; (2) heterogeneous grouping rather than ability grouping; (3) group cooperation rather than individual competition as a motivating device; (4) multicultural rather than monocultural, Anglo-oriented curriculum; (5) equal influence of parents of all ethnic groups in decision making rather than Anglo dominance; (6) multiethnic staff rather than Anglo staff only; (7) equal burden of transportation on all groups rather than an unequal burden of transportation; (8) equal resource allocation to all groups rather than unequal resource allocation; (9) equal discipline and rewards for all groups rather than inequalities in disciplining and rewarding; and (10) equal participation of all groups in extracurricular participation. The investigator hypothesizes that schools in which these 10 processes are operating will produce significantly more positive educational and mental health outcomes for children of all ethnic groups. Data will be collected by interviewer-observers using parent questionnaires, student questionnaires, observation forms, and fact sheets. The data obtained from the students will be compiled and displayed into computer profiles descriptive of each school. Further statistical treatment for analyzing the processes into a case study report for each school will be determined as the data are processed.
Duration: June 1975-June 1978.

37-OK-2 INTEGRATED SCHOOL SOCIALIZATION PROCESSES

Investigator(s): Ray C. Rist, Ph.D., Acting Associate Director, National Institute of Education, U. S. Department of Health, Education, and Welfare, Washington, D. C. 20208.
Purpose: To assess the impact of the school as a socialization agency upon children in integrated settings; and to focus upon the dynamics of school integration and the impact upon interpersonal interactions and expectations.
Subjects: Approximately 125 children in 1st, 2nd, 4th, and 5th grades. Twenty of the students were black; the remainder, white.
Methods: The research was primarily ethnographic: direct classroom observations were conducted during an entire academic year. Additional data collection procedures included questionnaires, sociometric assessments, and the use of documents.
Findings: Results suggest that the placement of only one or two black children in a classroom placed a heavy burden upon them in terms of adjustment. The absence of a critical mass of children with whom they could identify left them vulnerable to many pressures.
Duration: August 1973-completed.
Cooperating group(s): National Science Foundation.
Publications: (1) *The invisible children: School integration in America.* Cambridge, Massachusetts: Harvard University Press, 1977. (2) School integration and minority student tokenism. *Intergrateducation,* January-February 1976, 14(1).

Specific Skills

37-PA-1 NICARAGUA RADIO MATHEMATICS PROJECT

Investigator(s): Patrick Suppes, Ph.D., Director, Institute for Mathematical Studies in the Social Sciences, Ventura Hall, Stanford University, Stanford, California 94305.
Purpose: To investigate teaching mathematics by radio to primary school children; and to study appropriate techniques for using oral skills of children to further mathematics learning.
Subjects: Approximately 3,000 first and second grade Nicaraguan students, ages 6 to 14. Most of the children live in rural areas or small towns, and only a small percentage is likely to complete 6 years of primary school.
Methods: Randomly selected classes were assigned to radio and nonradio treatment. Classroom observations are used to collect information for curriculum revision and to assess children's responses to the radio lessons. Pre- and posttests are used to compare mathematics achievement. Tests are domain-referenced and use multiple matrix sampling.
Findings: Children's level of achievement is higher in radio classrooms than in traditional classrooms. Children respond well to radio lessons that require a high level of active responding (50 to 60 times per 30-minute lesson). The oral skills of the children are more highly developed than anticipated.
Duration: June 1974-June 1977.
Cooperating group(s): (1) Government of Nicaragua. (2) United States Agency for International Development.
Publications: Searle, B. *et al. The Radio Mathematics Project: Nicaragua 1975.* Stanford, California: Stanford University, Institute for Mathematical Studies in the Social Sciences (in press).

37-PB-1 PERCEPTUAL SPAN OF POOR READERS

Investigator(s): Carl Spring, Ph.D., Associate Professor, Department of Education, University of California, Davis, California 95616.
Purpose: To investigate a model attributing narrow perceptual spans of poor readers to abnormally slow phonological encoding.
Subjects: Poor and normal reading boys, ages 9 to 12, matched on socioeconomic status.
Methods: The subjects' phonological encoding speeds were measured by a digit naming test, and their perceptual spans were measured from 250 millisecond tachistoscopic presentations of random digit sequences. The collected data were statistically treated by regression, correlation, and commonality analyses.
Findings: Poor readers were slower on digit naming than normal readers, and their perceptual spans for random digits were impaired. As predicted by the model, a linear relation was found between perceptual span and naming speed, and these factors accounted for common reading ability variance.
Duration: 1974-completed.
Publications: Spring, C. and Farmer, R. Perceptual span of poor readers. *Journal of Reading Behavior,* 1975, VII(3), 297-305.

37-PB-2 IN REAL: INCLASS REACTIVE LANGUAGE THERAPY

Investigator(s): Rita S. Weiss, Ph.D., Professor, Department of Communication Disorders and Speech Science, University of Colorado, 934 Broadway, Boulder, Colorado 80309.
Purpose: To improve language skills of preschool and kindergarten language handicapped children in class without removal to clinic rooms.
Subjects: Children, ages 2½ to 6, who are in three different preschool centers and three public school kindergartens. Sixty of the children have specific learning disabilites; 15 have speech impairments.
Methods: This is a model program for improving language skills of preschool and kindergarten language handicapped children. It seeks to facilitate language maturation, remediate language impairment, and prevent learning disabilities in young children by performing language enrichment and therapy within the classroom without removing the children to clinic rooms. In class reactive language therapy (IN REAL) consists of three trained language specialists performing language therapy functions within classrooms. The project's objectives are (1) to demonstrate the practicality of language specialists in class management of language handicapped preschool children; (2) to demonstrate the cost benefits inherent in early diagnosis and remediation of language deficits as prevention of learning disabilities; (3) to demonstrate meaningful parent participation in the remediation of language handicaps (parents work in the classroom and attend inservice workshops to learn IN REAL techniques); (4) to utilize existing school specialist personnel innovatively; (5) to demonstrate the advisability of sensitivity to the familiarity factor in testing preschool children; and (6) to train future speech pathologists as language specialists. A battery of diagnostic tests will be administered to diagnose and to evaluate the progress of the children: Illinois Test of Psycholinguistic Abilities, Peabody Picture Vocabulary Test, Northwestern Syntax Screening Test, Templin-Darley Test of Articulation, Houston Test for Language Development, and the Verbal Language Development Scale (UTAH).
Findings: A significant change has occurred in IN REAL preschoolers, but no significant change has occurred in IN REAL kindergartens.
Duration: July 1974-June 1977.
Cooperating group(s): (1) Bureau of Education for Handicapped, Office of Education, U. S. Department of Health, Education, and Welfare. (2) Colorado Public Schools of Boulder Valley: RE #2, Adams #50, St. Vrain, and Greeley Districts. (3) Head Start. (4) Boulder Day Nursery. (5) New Horizons.

37-PB-3 READING DIARY STUDY

Investigator(s): Robert C. Calfee, Ph.D., Professor, School of Education, Stanford University, Stanford, California 94305.
Purpose: To define by detailed observation and sensitive testing how children who are predicted to learn to read in first grade acquire the necessary skills.
Subjects: 20 boys and 20 girls in 1973-1974; and 50 children in 1974-1975. Ten first grade classrooms were observed in four schools.
Methods: This investigation involved a comprehensive system of objective observations by RAMOS (Reading and Math Observation System, Calfee and Hoover, 1974) and a revised Reading Diary for 1974-1975, which provided a coded summary of classroom structure and activity. Observations were made weekly during reading periods, focused on many features in each classroom, and involved recording target student activities. An assess-

ment system was developed by the investigator for individual testing of target students. The assessment enabled an observer in the classroom to determine what the children were apparently learning, to test small samples using *clean* tests, and to determine skill levels in reading.
Duration: October 1973-June 1977.
Cooperating group(s): (1) Carnegie Corporation. (2) San Jose Unified School District.

Special Education

37-QB-1 THE RELATION OF UNDERACHIEVEMENT IN DIFFERENT SCHOOL SUBJECTS TO SELF-CONCEPT

Investigator(s): P. E. Vernon, Ph.D., Professor; and L. Ted Behrens, M.A., Graduate Student, Department of Educational Psychology, Faculty of Education, University of Calgary, Calgary, Alberta, Canada T2N 1N4.
Purpose: To determine whether anxiety and or aggression has a greater effect on mathematics achievement than other subjects.
Subjects: 155 boys and 137 girls in seventh grade.
Methods: In this investigation, over- and underachievement were measured by doing a multiple regression on achievement test scores of the revised Lorge-Thorndike. Self-concept was measured by testing with the Coopersmith Self-Esteem Inventory, the Frost Self-Description Questionnaire, and the Vernon Sentence Completion Test.
Findings: By far, the greatest amount of variance in achievement was accounted for by intelligence test scores, but small significant contributions from certain personality variables were noted; i.e., positive self-concept and favorable attitudes toward school. Little difference was found between school subjects, but boys were more affected than girls.
Duration: September 1975-September 1976.

37-QE-1 THE STRATHCLYDE PROJECT ON LEARNING AND TEACHING IN THE COMMUNITY

Investigator(s): J. E. Wilkinson, M.Ed., Lecturer, Education Department, University of Glasgow, 1, Lilybank Gardens, Glasgow, Scotland.
Purpose: To enhance the educational progress of disadvantaged children by identifying and influencing the crucial effects of the family, community, and school as socialization agencies.
Subjects: 200 children, ages 3 to 8, who reside in a compact housing estate in a deprived district of Glasgow.
Methods: In the first part of the study, attention will be focused on children under age 8, though some work will be undertaken with older children and adolescents. The research incorporates an evaluation of a three-component project to offset the harmful effect of urban deprivation. The three aspects are (1) work with parents through an educational visitor service; (2) work with teachers, social workers, and health visitors through an inservice center based in the community; and (3) integration of preschool services into a nursery network. The evaluation will monitor such changes taking place as educational performance of the children, attitudes of the teachers, and community involvement of the parents. Evaluation will be completed by using wide ranging psychological and sociological techniques.

Findings: Preliminary pilot work points to the positive effects of enhancing community awareness to the educational needs of children.
Duration: April 1976-March 1979.
Cooperating group(s): (1) Strathclyde Regional Council. (2) Notre Dame Educational Trust. (3) Jordanhill College of Education.
Publications: Wilkinson, J. E. and Murphy, H. F. Differential methods of enhancing cognitive growth in urban pre-school children. *Child: Care, Health and Development*, 1976, 2, 1-11.

37-QF-1 THE INCIDENCE OF APPARENT DEVELOPMENTAL DIFFICULTIES AMONG PRESCHOOL CHILDREN

Investigator(s): Russel F. Green, Ph.D., Coordinator of Research, Board of Cooperative Educational Services, Monroe #1, 41 O'Connor Road, Fairport, New York 14450.
Purpose: To attempt to establish the rate of occurrence of developmental difficulties among preschool children.
Subjects: 360 families with preschool children, ages 1 to 4.5, were randomly selected from 10 school districts. The sample consisted of white, mostly middle or upper class suburban residents.
Methods: The total group was divided into three age levels: 1.0 to 2.11 (144 completed interviews); 3.0 to 4.0 (118 completed interviews); and 4.0 to 4.5 (66 completed interviews). The number of families selected from each district was in proportion to that district's contribution to the total school enrollment in the area. The names and addresses of the families were given to an experienced social worker who then made contact with the families and arranged for an interview. The project director sent a letter describing the project to alert families that the social worker would call on them. A modified version of the Denver Developmental Screening Test was used as the interviewing instrument. In this modified version, greater emphasis was placed on personal-social adjustment and language development than was true in the original version. Wherever possible, targeted children were asked to perform certain tasks or answer certain questions. If, for some reason, the child would not perform or was not available, the mother reported on whether he could normally perform the task or knew the answers to the questions.
Findings: In each age group, there was one child who met the Denver criteria for abnormal. In the youngest group there were nine questionables; in the middle group, six questionables; and in the oldest group, five questionables. Combining the abnormals and questionables resulted in the following rates of developmental disorders: 6.9 percent for the youngest group; 6.4 percent for the middle group; and 9.1 percent for the oldest group. Across all three age groups, .9 percent would be considered abnormal, and 6.1 percent, questionable. The overall rate for the total group was 7.0 percent. The interviewer made special notations when, in her judgment, the child showed unusual degrees of shyness, immaturity, or apparent personal-social difficulties beyond those elicited through the Denver screen. The interviewer noted that in some 11.3 percent of the cases there was some questionable degree of shyness, personal-social adjustment, or immaturity. It was also noted that about 7.7 percent of the children had indications of language disorders. Results also indicated that parental concern in this population centered more on the question of language development rather than on the other areas of development.
Duration: September 1974-completed.
Cooperating group(s): (1) Ten school districts in the area. (2) Board of Cooperative Educational Services Preschool Advisory Council.
Publications: Copies of a report on the survey are available from Joanne E. Lang, Research Assistant at the investigator's address.

37-QF-2 NEUROLOGICAL IMPRESS AND LEARNING DISABLED CHILDREN

Investigator(s): Jimmie E. Cook, Ed.D., Director, Clinical Services; and Gregory J. Nolan, M.Ed., Coordinator, Project AIM, Edinboro State College, Edinboro, Pennsylvania 16444.
Purpose: To determine the effect of neurological impress upon the reading ability of learning disabled children.
Subjects: 30 girls and boys, ages 7 to 14, who have been diagnosed as learning disabled by a psychological battery.
Methods: The research design employed an experimental and a control group with 15 children in each group. The Standard Reading Inventory was used for pre- and posttesting the children. Each group received remedial instruction, but only the experimental group received 15 minutes of neurological impress twice a week.
Duration: January 1976-May 1976.

37-QF-3 ADMINISTRATORS' PERCEPTIONS OF SELECTED ASPECTS OF SPECIFIC LEARNING DISABILITIES PROGRAMS

Investigator(s): Patricia Silke Taylor, Ed.D., Assistant Professor, Department of Special Education, University of South Alabama, Mobile, Alabama 36688.
Purpose: To describe the perceptions of Florida administrators regarding the identification, evaluation, and placement of slow learning disabled (SLD) children; and to determine their attitudes toward Florida's operationalized definition of SLD.
Subjects: 101 elementary school principals, who have SLD classes; 16 special education directors; and 10 SLD supervisors.
Methods: A field tested 8-page questionnaire, designed to elicit information concerning selected aspects of SLD programs as well as information regarding the identification and placement procedures used in the Florida program, was sent to each subject. Some of the specific factors considered in the questionnaire were (1) perceived characteristics of a SLD child; (2) eligibility criteria used to determine a SLD child (Do these criteria fit the perceived characteristics?); (3) steps used in placing a child in a program; and (4) tests and evaluations used to identify children. Opinions and attitudes of the professional people involved in SLD programs were evoked on full-time equivalent funding, accepting pupils from other schools, and hiring teachers for the program. Responses were coded and tabulated and descriptive statistics were used to analyze the data.
Findings: Perceptions of administrators differ regarding characteristics, identification, and placement of SLD children.
Duration: December 1974-completed.
Cooperating group(s): Florida Educational Research and Development Council.

37-QF-4 ACADEMIC PROGRESS IN A RESIDENTIAL SHORT-TERM BEHAVIOR MODIFICATION SUMMER CAMP FOR CHILDREN

Investigator(s): Harve E. Rawson, Ph.D., Professor of Psychology, Hanover College, Hanover, Indiana 47243; and Crystal R. Sears, B.A., Teacher-Therapist, Englishton Park Academic Remediation and Training Center, Lexington, Indiana 47138.
Purpose: To determine academic progress made by children, ages 6 to 12, in a 10-day period during which they were exposed to an academic remediation residential camp.

Subjects: 120 children, ages 6 to 12, in four groups: 30 boys, ages 8 to 10; 15 boys and 15 girls, ages 9 to 11; 30 boys, ages 10 to 12; and 15 boys and 15 girls, ages 6 to 8. All children in the study were enrolled in public schools throughout the states of Indiana and Kentucky and were selected by school personnel for inclusion in the special program for purposes of behavioral disorientation and academic problems related to behavior disorders. Average academic retardation was 2.4 grade levels according to age level, while average IQ scores were 112.6. Subjects were selected by school psychological clinics, comprehensive mental health centers, and child guidance clinics throughout the area.
Methods: The children worked in a small group, intensive class instruction situation, which was followed by individualized tutoring in academic areas of greatest weakness by two separate tutors every day for 10 days. A control-test experimental design was conducted with pretesting done 24 hours after arrival and posttesting performed 24 hours prior to exit from the program (an 8-day interval). The Metropolitan Achievement Test, appropriate for age and grade level, was utilized as the criterion measurement, with alternate forms used for pre- and posttesting. The control-test experimental design was employed on four groups of children throughout the 2-month period. Group I prepost testing was done on 8- to 10-year-old boys and was replicated on another group of boys, ages 10 to 12 (Group II). A third replication was made on boys and girls, ages 8 to 11 (Group III); a fourth replication, on boys and girls, ages 6 to 8 (Group IV). A two-way analysis of variance was performed using prepost difference scores as the criterion with age grouping as one main effect and sex (within Group III and Group IV) as the other main effect. Samples consisted of 30 children in each grouping with sex breakdown approximately the same in Groups III and IV. Hence, each replicated group served as its own control. F-tests were run for each main effect as well as for interaction between age grouping and sex. In addition, a t-test for related samples was run within each group to determine the significant level of simple prepost differences by group and within age groupings to determine the significance level of any simple sex differences.
Findings: Statistical results indicate that significant gains were made in both mathematics and reading ability as a result of the program, with gains averaging around 3.2 months of regular school work in the 8-day period. Younger children made slightly higher gains than older children, although all age groups showed significant gain. Sex differences were nonsignificant throughout the study.
Duration: June 1974-completed.
Publications: Unpublished thesis available from: Director of Libraries, Hanover College, Hanover, Indiana 47243; Sears, Crystal R. Academic progress in a residential short-term behavior modification summer camp for children, 1975.

37-QF-5 INSTRUCTIONAL MATERIALS FOR AUDITORY PERCEPTION: AN EVALUATION

Investigator(s): Robert P. Gelhart, Ed.D., Professor, Department of Psychology, Division of Special Education, Pepperdine University, 4019 Westerly Place, Suite 105, Newport Beach, California 92660.
Purpose: To field test the effectiveness of instructional materials designed to remediate specific auditory perceptual skills.
Subjects: 25 learning disabled children, ages 8 to 12.
Methods: This investigation is a pilot study and involves a comparison between experimental and control subjects matched on selected criteria. The experimental subjects will receive 15 weeks of daily 20-minute, instructional periods. Pretest data will be collected using the Illinois Test of Psycholinguistic Abilities, Wide Range Achievement Test, Gelhart Multi-Nonsense Syllable Discrimination Test, and the Wepman Auditory Discrimination Test. Current statistical treatment uses t-tests and correlations.
Duration: 1975-1976.

37-QH-1 IMPROVING THE ACCESS OF SPECIAL NEEDS STUDENTS TO THE RESOURCES AND FACILITIES OF VOCATIONAL SCHOOLS

Investigator(s): Harold Goldmeier, Ed.D., Executive Director, Massachusetts Committee on Children and Youth, 14 Beacon Street, Suite 706, Boston, Massachusetts 02108.
Purpose: To develop a census of special needs children; to identify factors facilitating and hindering access to vocational resources; to recommend changes in administrative procedures and legislation; and to provide technical assistance.
Subjects: Handicapped children, grades 7 to 12.
Methods: A review of State Department of Education policies and procedures was made and vocational educators were interviewed. Questionnaires were mailed to all public school special education administrators, to vocational school directors and superintendents directors, and to Massachusetts rehabilitation counselors.
Findings: Over 50 percent of the identified special needs students are being recommended for occupational education. Sixty percent of the special needs students are accepted into comprehensive high school programs, 9 percent into local vocational high schools, and 5 percent into regional vocational high schools.
Duration: February 1975-completed.
Publications: A report is available from the investigator. ($5.00 to schools and nonprofit organizations; $10.00 to others.)

37-QH-2 PREVENTION OF LEARNING PROBLEMS IN HIGH RISK INFANTS AND YOUNG CHILDREN: HIGH INPUT PROJECT II

Investigator(s): Geraldine M. Devor, Ed.D., Project Director, High Input Project II, Contra Costa County Superintendent of Schools, Room 19, 989 - 18th Street, Richmond, California 94801.
Purpose: To assess an educational intervention program for very young medical and social risk children who have potential developmental problems that directly relate to school performance.
Subjects: 120 infants, contacted as soon after birth as possible, were randomly assigned to either a treatment or a control group. Medical risk criteria were established by a team of pediatricians, and social risk was determined in cooperation with the County Social Services Department. The largest proportion of the children were from low socioeconomic status families.
Methods: The major objective of this research is for the treatment group to score a group average of one standard deviation above the control group on selected tests by the end of the third year of the project. In addition to t-tests for the two groups, a multivariate analysis of variance for repeated measures and a test for a trend of increasing differences between groups over time will be used. During the current year (1974-1975), the mean age of the children is less than 2 years. The Bayley Scales of Infant Development and the Denver Developmental Screening Test are the main research instruments. Parents are administered the HIP Parent Knowledge Inventory and also evaluate the various components of the project. In-process diagnostic assessments of individual children are the basis for the prescriptive teaching curriculum.
Findings: Data have been collected for the current year, but data analyses are in process for the Bayley and Denver tests. Pre- and posttest comparisons of the Parent Inventory show an increase significant at .01. On a scale of 1 (low) to 3 (high), parents evaluated the program at 2.9. Evaluations of staff performance by outside experts are excellent.
Duration: July 1974-July 1977.

Cooperating group(s): (1) Contra Costa County Medical Services, Health Department, Mental Health Department, and Social Services. (2) Richmond Unified School District. (3) Contra Costa Alameda Medical Association.
Publications: Year-end reports and a final project report will be available from the investigator.

37-QH-3 PREVENTION OF LEARNING PROBLEMS IN HIGH RISK INFANTS AND YOUNG CHILDREN: CHILD ADVOCATE METHOD (HIGH INPUT PROJECT III)

Investigator(s): Geraldine M. Devor, Ed.D., Project Director, High Input Project III, Contra Costa County Superintendent of Schools, Room 19, 989 - 18th Street, Richmond, California 94801.
Purpose: To assess a child advocate program for very young medical and social risk children who have potential developmental problems that directly relate to school performance.
Subjects: 120 infants, contacted as soon after birth as possible, were randomly assigned either to a child advocate group or to a control group. Medical risk criteria were established by a team of pediatricians, and social risk was determined in cooperation with the County Social Services Department. The largest proportion of subjects were from low socioeconomic status families.
Methods: The major objective of the research is for the treatment group to score a group average of one standard deviation above the control group on selected tests by the end of the second year of the project. The advocate condition matches the child's needs with community resources. In addition to t-tests for the two groups, a multivariate analysis of variance for repeated measures and a test for a trend of increasing differences between groups over time will be used. During the current year, the mean age of the children is less than 2 years. The Bayley Scales of Infant Development and the Denver Developmental Screening Test are the main research instruments. (This project was originally a component of High Input Project II. It was separated into two projects by the California State Department of Education.)
Findings: Data have been collected for the current year, but data analyses are in process for the Bayley and Denver Tests. Parental evlauations indicate an interest in the project and were particularly favorable on the developmental assessments and home interviews.
Duration: July 1975-July 1977.
Cooperating group(s): Contra Costa County Medical Services, Health Department, Mental Health Department, and Social Services.
Publications: Year-end reports and a final project report will be available from the investigator.

SOCIAL SERVICES

37-RA-1 MONITORING EVALUATION RESEARCH ON AND ABOUT CHILDREN

Investigator(s): Linda B. Bourque, Ph.D., Assistant Professor, School of Public Health and Institute for Social Science Research; and Howard E. Freeman, Ph.D., Director, Institute for Social Science Research, University of California, 405 Hilgard Avenue, Los Angeles, California 90024.

Purpose: To examine the quantity and quality of research conducted under federal grants and contracts; and to assess the potential child and family relevance of currently funded research.

Subjects: Approximately 300 final reports of federal contracts and grants that were filed between January 1975 and January 1976.

Methods: Evaluations of interventions on human subjects define the kind of research being examined. Reports are content analyzed, and information recorded includes data on the intervention conducted and the evaluative research used in analyzing the effects of the intervention. Data on the intervention include information about the stated goals of the intervention, the targets of the intervention, the program elements of the intervention, and its potential relevance for children and/or families. Data on the evaluation include information as to whether process or impact evaluations were done, general research strategy, variables used, types of samples, methods of data analysis, hypotheses, findings, conclusions, and judgmental inferences about the adequacy of the research procedures.

Duration: July 1975-September 1977.

Cooperating group(s): Foundation for Child Development.

37-RA-2 INDIAN CHILD WELFARE: A STATE-OF-THE-FIELD STUDY

Investigator(s): DeWitt John, M.A., Research Social Scientist; and Tillie Walker, M.A., Research Specialist, Center for Social Research and Development, Denver Research Institute; and John Compton, M.S.W.;Associate Professor, School of Social Work, University of Denver, Denver, Colorado 80210.

Purpose: To define the state-of-the-field of Indian child welfare; and to identify major policy and program alternatives.

Subjects: Agencies providing child welfare services for Indians.

Methods: This investigation is a national study of the provision of child welfare services and needs and involves field research at 19 sites, including 11 reservations. Interviews will be held with all service providing agencies, with tribal and state police and courts, and with tribal councils. Questionnaires will be mailed to 22 states: to child welfare departments, state institutions, Bureau of Indian Affairs and Indian Health Service area offices, Indian organizations, and private agencies. A mail survey will be conducted of all graduate schools of social work and of Indian faculty, students, and graduates of these schools. Household surveys will be made to determine child welfare needs and experiences with agencies at two sites. The results of this investigation should provide (1) a literature review on Indian child welfare, (2) a description and analysis of current needs and service delivery patterns, and (3) identification of major policy questions and alternatives in the areas of cultural differences, self-determination and child welfare, and unmet needs.

Duration: June 1975-June 1976.
Cooperating group(s): (1) Office of Native American Programs, U. S. Department of Health, Education, and Welfare. (2) Children's Bureau, Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.
Publications: Two publications are available from the Center for Social Research and Development: (1) *Indian child welfare: A review of the literature* for $3.00; and (2) *Indian child welfare: A state-of-the-field study* (price not indicated).

37-RC-1 SCHOOL AGE PARENTS IN MASSACHUSETTS: PREGNANCY, PARENTHOOD, AND THE PUBLIC SCHOOLS

Investigator(s): Harold Goldmeier, Ed.D., Executive Director; and William M. Schmidt, M.D., Chairman, Massachusetts Committee on Children and Youth, 14 Beacon Street, Suite 706, Boston, Massachusetts 02108.
Purpose: To familiarize school personnel with program policy and legal issues related to school age parents.
Subjects: Boys and pregnant girls, ages 12 to 18; and fathers and mothers of pregnant girls.
Methods: A search was made of 3,000 certificates of live births for 1972 to 1973 by age of mother and city of residence. An inservice program, conducted for 700 school nurses, emphasized (1) medical and social aspects of adolescent pregnancy, (2) legal and educational responsibilities of the schools, (3) the role of the school health staff, (4) outreach to young mothers and pregnant girls (in school and dropouts), (5) school programming for young mothers and pregnant girls, and (6) resources for the school staff.
Duration: May 1974-completed.
Publications: (1) Goldmeier, H. *School age parents in Massachusetts: Pregnancy, parenthood, and the public schools.* Boston: Massachusetts Committee on Children and Youth ($2.00) is available from the investigator. (2) Goldmeier, H. School age parents. *Children Today* (in press).

37-RD-1 A STUDY OF INDEPENDENT ADOPTION

Investigator(s): Ann W. Shyne, Ph.D., Research Director; and William Meezan, M.S.W., Research Associate, Child Welfare League of America, Inc., 67 Irving Place, New York, New York 10003; and Sanford Katz, L.D., Professor, Law School, Boston College, Chestnut Hill, Massachusetts 02167.
Purpose: To assess the risks to child, natural parents, and adoptive parents in independent adoption; and to identify legal, administrative, and practice changes needed to diminish these risks.
Subjects: A public and a voluntary agency in each of the states; and approximately 100 adoptive and 100 natural parents who have been involved in independent adoption.
Methods: This is a descriptive study including several concurrent surveys to obtain facts and opinions as a basis for action. The methodology includes analysis of relevant state laws and their enforcement, questionnaires to selected agencies in all states, and interviews with adoptive and natural parents involved in independent adoptions in five metropolitan areas.
Duration: June 1975-June 1977.
Cooperating group(s): Children's Bureau, Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.
Publications: A report will be published by the Child Welfare League of America in late 1977.

37-RD-2 THE CHANGING FACE OF ADOPTION

Investigator(s): Richard O. Pancost, M.S., Executive Director, Children's Home Society of California, 3100 West Adams Boulevard, Los Angeles, California 90018.
Purpose: To ascertain the attitudes of all parties to adoption regarding open adoption records and reunions of adult adoptees and birth parents.
Subjects: Adults who were adopted as children; parents who have adopted children; and parents who have given up their children for adoption.
Methods: Two basic questions are being examined: What are the rights of adult adoptees to information that was sealed by the court when their adoption was approved? and How far do the rights of unmarried fathers extend when unmarried mothers want to plan adoption? Past and current practices, the laws concerning adoption, and the rights of the individuals who make up the home will be examined. Data will be collected through questionnaires concerned with people searching for birth parents or for adopted children, and the effect the search has on the adopting parents.
Duration: April 1976-September 1976.
Publications: The changing face of adoption. *Children's Home Society Magazine*, Spring 1976.

7-RD-3 CHANGING FAMILY PATTERNS AND THE ADOPTION OF MINORITY CHILDREN

Investigator(s): Arnold R. Silverman, M.A., Assistant Professor; and William Feigelman, M.A., Chairman and Associate Professor, Department of Sociology, Nassau Community College, Garden City, New York 11530.
Purpose: To investigate the impact of changing family patterns on the adoption of minority children.
Subjects: The sample consists entirely of adoptive parents but tends to over-represent those who have already adopted minority children. The typical family consisted of white, native born parents who had adopted a foreign born child, most often from Asia. The sample was drawn from membership lists provided from a variety of adoptive parent organizations located throughout the country and from several international adoption agencies that specialize in the placement of minority (usually foreign born, nonwhite) children. Attempts were also made to ensure the inclusion of at least several constituencies that represented in-country, in-race, adopting families.
Methods: Two fundamental traditional supporters of the family, conventional religious affiliations and conservative political attachments, will be explored related to their relationship in the adoption of hard-to-place children. The data were gathered through a mailed questionnaire to a nation-wide sample of adoptive parents. Two pretests were conducted and examined before final revised questionnaires were distributed to the sample. Respondents indicated the extent to which husband and wife shared the tasks of feeding children, supervised children at play, and diapered babies. Two measures of shared work roles were examined: an attitudinal measure of whether mothers can work and be good mothers at the same time, and the employment status of the mother (whether she was full-time, part-time, or not employed outside the home). Religious traditionalism was measured along two axes: the frequency of religious participation, and the affiliation with conventional religion. Political conservatism was measured by the wife's political identification on a 6-point scale ranging from very conservative to radical.
Findings: The data revealed that those in the forefront in assuming more contemporary family lifestyles are more amenable to parenting minority children. There appears to be a close affinity between the development of more flexible and interchangeable family roles and the acquisition of wider ranging perspectives of who might be included among

family members. As people renounce conventional sex roles,they appear to become increasingly willing to extend kinship beyond the traditionally accepted realm of biologically related individuals. Thus, recent trends in adoption appear to be an integral component of more pervasive family changes. The findings suggest that the kind of child parents choose to adopt closely reflects their values and institutional commitments. Liberal and radical parents displayed the most commitment to adopting black children. The conventionally religious showed the greatest interest in handicapped and retarded children. These preferences would seem to indicate that families are often making an ideological statement in their adoptions. Results indicate that secular liberals differed from the conventionally religious and conservatives not so much in their willingness to adopt stigmatized children, but in the kinds of children they were willing to accept. The findings point to a more general need to re-evaluate the criteria employed in placing stigmatized children. The most immediate implication of the data for social policy is in the adoptive placement of stigmatized children. Social agencies are often reluctant to believe that there are families willing to adopt stigmatized children. Yet, the data suggest that, as the trend toward sharing work and child care roles continues, the number of families who would be receptive to the adoption of such children is likely to increase.
Duration: September 1974-June 1977.

37-RD-4 BEHAVIOR GENETIC STUDIES OF ADOPTIVE AND NATURAL FAMILIES

Investigator(s): Sandra Scarr-Salapatek, Ph.D., Professor, Institute of Child Development; and Richard A. Weinberg, Ph.D., Associate Professor, Department of Psychoeducational Studies, University of Minnesota, 548 Elliott Hall, Minneapolis, Minnesota 55455.
Purpose: To provide better estimates of the genetic and environmental variances and covariances for intellectual, personality, and attitudinal measures in the white population; and to estimate the range of reaction for intellectual characteristics in black and white populations.
Subjects: First study: adoptive families and natural families; and children, ages 16 to 21. Second study: white adoptive parents who have black adopted children, white adopted children, and biological children.
Methods: In the first study, data will be obtained on related and unrelated children. Parent-child correlations will be calculated for adoptive and natural families and natural mothers of adopted children. From these data, estimates will be made of the variance components in intellectual, personality, and attitudinal characteristics of the population. In the second study, mean scores of children in the sample will be compared, and parent-child correlations calculated.
Findings: Study 2: The poor performance of black children on IQ tests and in school has been hypothesized to arise from (1) genetic racial differences or (2) cultural environmental disadvantages. To separate genetic factors from rearing conditions, the investigators studied 130 black and interracial children adopted by economically advantaged, white families. The black adoptees, whose natural parents were educationally average, scored above the IQ and the school achievement means of the white population. Genetic and environmental determinants of differences among the black interracial adoptees were largely confounded. The higher IQ scores of the socially black classified adoptees indicate malleability for IQ under rearing conditions that are relevant to the tests and the schools.
Duration: December 1973-December 1976.

Cooperating group(s): (1) National Institute of Child Health and Human Development, National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare. (2) Minnesota State Department of Public Welfare — Adoption Unit. (3) Open Door Society of Minnesota. (4) Lutheran Social Service and Children's Home Society of Minnesota.

Publications: Scarr-Salapatek, S. and Weinberg, R. A. The war over race and IQ: When black children grow up in white homes. *Psychology Today*, 1975, 80-82.

37-RD-5 FOLLOW-UP STUDY OF ILLEGITIMATELY BORN AND OF ADOPTED CHILDREN

Investigator(s): National Children's Bureau, 8 Wakley Street, Islington, London, England EC1V 7QE. Address correspondence to: Gillian Pugh, Senior Information Officer, National Children's Bureau.

Purpose: To determine the development at the age of 11 of children who were illegitimately born and of children who were adopted, and to compare it to children who were born into two-parent families.

Subjects: Children chosen from a survey of all children born in England, Scotland, and Wales in 1 week in March 1958. (See Study 37-BA-3 in this bulletin.)

Methods: This investigation will use data gathered by the National Child Development Study. The investigation involves making cross-sectional comparisons between the different groups of children at age 11. (The comparisons are similar to those in Study 37-BA-3.) It will examine longitudinally changes in development of all groups of children, ages 7 to 11, to discover whether differences between the children found at 7 years have increased or diminished 4 years later. The study will look at aspects of the home environment which could account for any differences in child development which may be found. The family situation of many children, legitimate and illegitimate, does not remain static; particular attention therefore will be given to the types of families in which these children live and change in the family situations of the children during their first years. Factors associated with different types of families such as social class, income, and housing will also be examined.

Duration: 1975-1976.

Cooperating group(s): (1) Children's Research Fund. (2) Noel Buxton Trust. (3) Buttle Trust.

37-RF-1 STUDY AND EVALUATION OF COMBINED DAY CARE/NURSERY EDUCATION CENTERS

Investigator(s): National Children's Bureau, 8 Wakley Street, Islington, London, England EC1V 7QE. Address correspondence to: Gillian Pugh, Senior Information Officer, National Children's Bureau.

Purpose: To evaluate combined nursery schools and day care centers.

Subjects: Children in combined nursery schools and day care centers; and a control group of children who are in conventional nursery and conventional day care centers.

Methods: There are at present two main types of local authority provision for the preschool child: nursery schools and classes administered by the education authority, and day care nurseries or day care centers administered by the social services department.

This project is evaluating a number of these combined centers in order to assess their effects upon the children who attend and their families, the training and experience of the staff of the centers, and how the centers compare with conventional nursery education and day care facilities. The project team will make an assessment of the effects of attendance at the nursery centers upon the children's intellectual and social development, and will also look at the health care provided and the children's physical development. Information will also be obtained from parents about their views of the centers and their children's experience there. A further aspect of the study will be the training and experience of the staff involved, their views as to the aims and functions of the centers, and their own work role.

Duration: 1974-1978.

Cooperating group(s): (1) Department of Education and Science. (2) Department of Health and Social Security.

Publications: Pringle, M. K. and Naidoo, S. *Early child care in Britain.* Gordon and Breach, 1975.

37-RG-1 MATERNAL INTERVENTION TO AID DEVELOPMENT IN PREMATURES

Investigator(s): Richard Umansky, M.D., Director; and Rosamund Gardner, Ph.D., Chief Psychologist, Child Development Center, Children's Hospital Medical Center, 51st and Grove Streets, Oakland, California 94609.

Purpose: To evaluate a home intervention program for improving maternal capacity to foster developmental processes in high risk prematures; and to provide ties of responsibility, affection, and enhanced coping capacity between mothers and their high risk premature infants.

Subjects: 141 high risk premature infants studied from birth to 1 year.

Methods: The intervention program is designed to enhance maternal attachment bonds using specially trained nurse-therapists is a catalytic and supportive role with mothers during the first 5 months following the infant's hospital discharge. The home intervention will be supplemented by group meetings and individual counseling. Efficacy of the maternal intervention program will be determined by comparing the study group mothers with a control group of mothers in three specific areas of maternal function. Data, collected by a psychologist during a 3-hour observation period at the home when the infants are 5½ months old, will concern (1) bond attributes — those qualities of maternal attachment that facilitate basic developmental processes in infants (Maternal coping behaviors are dependent on these attributes.); (2) autonomous disability coping — the maternal coping behaviors that facilitate developmental progress in areas of developmental disability in infants; and (3) professionally assisted disability coping — the maternal collaborative behaviors in association with remedial infant education directed at facilitating infant progress in areas of developmental disability. Both groups of infants will also receive a neuropediatric evaluation to determine infant severity. The infants will also be assessed by the Bayley Scales of Infant Development, Cognitive Tests and Infant Behavior Profile. Infants who score low in both groups will receive infant education. At 12 months, all four groups of infants will be assessed by the same tests and the three areas of maternal functioning will be reassessed. Influence of critical variables of parity and socioeconomic status will be examined as well as factors of infant sex and infant medical severity.

Duration: 1973-1976.

Cooperating group(s): Bureau of Community Health Services, U. S. Department of Health, Education, and Welfare.

Publications: Information on publications is available from the investigators.

Child Abuse

37-RH-1 A PROSPECTIVE STUDY OF THE ANTECEDENTS OF CHILD ABUSE

Investigator(s): Byron Egeland, Ph.D., Professor, Psychoeducational Studies, University of Minnesota, 548 Elliott Hall, Minneapolis, Minnesota 55455; and Amos Deinard, M.D., Associate Professor, Department of Pediatrics, University of Minnesota Medical School, Minneapolis, Minnesota 55455.
Purpose: To look at mothers, infants, and mother-infant interaction to identify possible high risk situations for child abuse and neglect.
Subjects: Primiparous mothers, 16 years and older, who are participating in the Maternal and Infant Care Project of the Minneapolis Health Department. The mothers are enrolled in the research project during the last trimester of pregnancy. When possible, fathers are encouraged to participate. The majority of the families are white and from lower socioeconomic backgrounds.
Methods: Specific characteristics of the parents and infant are looked at in terms of how they relate to the quality of the parent-infant interaction and the care the child receives. During the last trimester of pregnancy, parents are given measures to assess certain personality characteristics and their expectations, perceptions, and feelings regarding their newborn. An attempt is made to characterize the temperament of the newborn by using the Brazelton Neonatal Assessment Scale and nurses' ratings scale. The parents are retested 3 months after the infant is born, in order to determine the extent to which the baby has altered the expectations and perceptions of the parents. At 3-month intervals during the first year, parent-infant interaction is observed with particular concern for the quality of that relationship.
Duration: June 1975-June 1978.
Cooperating group(s): Maternal and Infant Care Project, Minneapolis Public Health Department.

37-RH-2 AN INVESTIGATION OF THE RELATIONSHIP BETWEEN SUBSTANCE ABUSE AND CHILD ABUSE AND NEGLECT

Investigator(s): Joseph Mayer, Ph.D., Director; and Rebecca Black, Ph.D., Chief of Psychology, Washingtonian Center for Addictions, 41 Morton Street, Boston, Massachusetts 02130.
Purpose: (1) To investigate and compare the frequency and types of child abuse and neglect that are associated with alcohol and opiate ingestion; (2) to examine the relationship between stages in the cycles of drug and alcohol abuse (acquisition, ingestion, withdrawal, and abstinence), the adequacy of child care, and the presence or absence of child abuse and neglect; and (3) to determine the extent to which social and situational factors associated with child abuse and neglect are operative among alcohol and drug addicts.
Subjects: 100 alcoholics and 100 opiate addicts with children under 18.
Methods: The subjects will be given a structured interview designed to gather information on (1) demographic data, (2) history of drug and alcohol abuse, (3) childhood history, (4) care/abuse/neglect of children, and (5) the relationship between stages in the cycle of alcohol or opiate abuse and child care/abuse/neglect. Subjects will also complete the Minnesota Multiphasic Personality Inventory, Survey on Bringing Up Children (Ray Helfer, M.D.), and the Schedule of Recent Experience (Thomas Holmes, M.D.).
Duration: June 1975-June 1978.

Cooperating group(s): Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.
Publications: (1) Black, R.; Mayer, J.; and Zakian, A. Between opiate abuse and child abuse and neglect. In J. H. Lowinson (Ed.), *Proceedings of the National Drug Abuse Conference 1976.* New York, New York: Marcel Dekker, Inc., 1976. (2) Mayer, J. and Black, R. The relationship between alcoholism and child abuse/neglect. Paper presented at the 7th Annual Medical-Scientific Session of the National Alcoholism Forum, Washington, D. C., May 7, 1976.

37-RH-3 CAUSAL FACTORS IN ABUSE AND NEGLECT: A PROSPECTIVE STUDY

Investigator(s): William Altemeier, M.D., Associate Professor; and Susan O'Connor, M.D., Assistant Professor, Department of Pediatrics, Vanderbilt University Hospital, Nashville, Tennessee 37215; and Peter Vietze, Ph.D., Associate Professor, Department of Psychology, George Peabody College for Teachers, Nashville, Tennessee 37203.
Purpose: To determine characteristics of the child, the mother, and their interaction, prior to abuse and neglect, as compared to a random sample of equivalent mother-child dyads.
Subjects: 200 high risk mothers considered likely to abuse and neglect their children; and 200 comparison mothers randomly selected from the total indigent population of Nashville General Hospital. Approximately another 30 families, who are known abusers/neglecters, will be studied. The high risk and comparison mothers are all pregnant and have attended the Nashville General Prenatal Clinic at least once. The mothers range in age from 12 to 40 and are either primiparous or multiparous. The child resulting from the pregnancy is the target child.
Methods: Classification of the subject as high risk will be determined by a standardized 20- to 30-minute interview developed by the investigator. The interview will be given to the mother while she is still pregnant. Areas covered in the interview are mother's childhood, support systems, stress, and attitudes toward pregnancy. Subjects selected by interview and randomly are followed for growth of the child, occurrence of abuse or neglect, and attitudes toward childrearing. Questionnaires developed by Carey and Cohler are used for periodic direct observations in the homes to determine mother-child interaction. Datamyte recorders are also used in the home observations.
Duration: June 1975-May 1978.
Cooperating group(s): Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.

37-RH-4 SAN ANTONIO CHILD ABUSE AND NEGLECT RESEARCH CENTER

Investigator(s): Gayle Luebbert, M.S., Research Associate, San Antonio Child Abuse and Neglect Research Center, Three Americas Building, Suite 327, 118 Broadway, San Antonio, Texas 78205.
Purpose: To gather basic empirical data on the phenomenon of child abuse and neglect by focusing on the social environment of parents who abuse or neglect their children; and to discover the significance of alcohol and other drug use and/or dependence in child abuse and neglect cases.
Subjects: Male or female parents or custodians drawn from white, black, and Mexican-American ethnicities representing all socioeconomic strata. The subjects are adult residents (18 years or older) of Bexar County, Texas, who are registered by the Texas Department of Public Welfare as confirmed child abusers/neglecters, adult abusers of mood altering substances, or adult nonabusers/non-neglecters of children.

Methods: This exploratory study is designed to compare child abusers/neglecters to a matched group of child nonabusers/non-neglecters, so that it can be determined more precisely which characteristics and social environments are unique to child abusers/neglecters and which are more reflective of other life positions of the parents. The principal method of data collection will be a 1- to 2-hour interview of the subjects. The interview instrument consists of 150 to 200 close-ended items and will be administered in Spanish or English. The first section of the interview deals with descriptive demographic information: ethnicity, socioeconomic status, family structure, gender of perpetrator, abuse or neglect, residence location, type of dwelling, and type of substance abused. The second section of the interview deals with situational-social environmental items. Some of the items will be taken directly from the Family Development Study Interview. Variables examined include relationship between the parents; relationship with relatives, friends, and neighbors; relationship with community services; relationship with the children; presence of rewarding-frustrating events in parents' lives; and socialization of the parents. The interviewers will represent the three ethnic classes and will interview persons of their own ethnicity. Subjects will be asked by their caseworker, from the Texas Department of Public Welfare, about participating in the study and will receive $10 for their participation. After the interview instrument has been constructed, it will be translated to Spanish. The two language versions will be evaluated for content validity with back-translation techniques (Brislin, Lonner, and Thorndike, 1967).
Duration: June 1975-June 1978.
Cooperating group(s): (1) Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare. (2) Texas Department of Public Welfare, Mental Health-Mental Retardation.

37-RH-5 ARKANSAS CHILD ABUSE AND NEGLECT PROJECT

Investigator(s): Jack W. Hill, Project Director, Arkansas Social Services, P. O. Box 1437, Little Rock, Arkansas 72203.
Purpose: To demonstrate the application of a volunteer based model in the area of protective services to abused and neglected children.
Subjects: Abusive parents and abused children under age 12 in a two-county (Jefferson and Washington) area of Arkansas.
Methods: The model was derived from a pilot project begun in 1972 in Pulaski County, Arkansas which utilized trained volunteer lay therapists in child abuse and neglect cases. The model encompasses the efforts of two independent protective services: SCAN Service, Inc., a private nonprofit agency that provides treatment to abusive parents and uses lay therapists; and the Graduate School of Social Work at the University of Arkansas, Little Rock, which will provide evaluation and monitoring services. Together these three components coordinate to provide a comprehensive program of education, diagnosis, treatment, training, and auxiliary services. The model is designed to assist those professional agencies who have prime responsibility for child protection by expanding their capability through the use of volunteers and through total community involvement in the problem.
Duration: May 1974-April 1977.
Cooperating group(s): (1) SCAN Service, Inc. (2) Graduate School of Social Work, University of Arkansas, Little Rock. (3) Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.
Publications: A report is available from Ms. Linda Barrett, Berkeley Planning Associates, 2320 Channing Way, Berkeley, California 94704.

37-RH-6 COORDINATING COMMUNITY CONCERN FOR CHILD ABUSE/NEGLECT

Investigator(s): Christina Narr, M.S.W., Executive Director; and Martha Perry, Ph.D., Research Consultant, Panel for Family Living, Incorporated, 1115 South 4th Street, Tacoma, Washington 98405.

Purpose: To evaluate the efficacy of parent education, group therapy, parent aides, and outreach counseling offered to parents who have abused or neglected their children.

Subjects: Approximately 100 parents, male and female, ages 18 to 50.

Methods: This investigation is based on a pre-, posttest design, and evaluation will consist of a battery of tools that will allow interpretation of client change. The battery will allow systematic collection of information about parents, children, parent-child interaction, and environmental factors. Data on the children will be collected by using (1) the Developmental Profile (parent interview and child testing) to determine the child's developmental level and accuracy of the parent's report, (2) the Survey of Temperamental Characteristics, (3) Problem Behavior Checklist, (4) Child Behavior Rating Scale to identify the emotionally or behaviorally deviant child, and (5) the Parent Expectation of Child Survey to determine if the parents' expectations are developmentally appropriate. Data on the parents will be gathered by using (1) the Self-Evaluation Questionnaire to determine anxiety level, (2) the Janis-Field Feelings of Inadequacy Scale to determine level of self-esteem, and (3) the Child Behavior Management Skills Inventory. To gather data on the family situation, the Recent Experiences Survey and the Family Environment Scale will be used. Choice of these measures was based in part upon assertions in the prevailing literature that these factors might explain child neglect.

Findings: Results to date consist of demographic descriptions of clients and clinician judgments of progress.

Duration: May 1974-April 1977.

Cooperating group(s): Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.

37-RH-7 CHILD ABUSE AND NEGLECT RESOURCES DEMONSTRATION PROJECT

Investigator(s): Janne B. Dinges, M.S.S.W., Director, Child Abuse and Neglect Resources Demonstration Project, Texas Department of Public Welfare, Fountain Park Plaza, 3000 South Interregional Highway, Austin, Texas 78704.

Purpose: To evaluate and improve components of current Texas Department of Public Welfare (TDPW) case identification methods, specifically the Child Abuse and Neglect Report and Inquiry System (CANRIS) and the public information campaign on child abuse and neglect; to design and test specific methodologies for protective services needs and resources assessments; and to design models for use by the TDPW staff to develop and coordinate resources for services identified as needed for the prevention and treatment of child abuse and neglect.

Subjects: Samples for the three research designs for Phase 2 include staff from community resources, leaders and members of voluntary community organizations, TDPW state office and regional staffs, protective services clients, Parents Anonymous members and sponsors, medical professionals, law enforcement personnel, and day care personnel.

Methods: The CANRIS evaluation involves survey research utilizing interviews, questionnaires, and case readings in an effort to determine if the registry system complies with its legal mandate and stated purposes. The public information campaign evaluation involves an experimental research design comparing experimental and control groups to evaluate the effectiveness of the public information campaign materials developed for four target groups. The needs and resource assessments involve exploratory survey research utilizing questionnaires, interviews, and case readings to develop a data base for identifying protective service needs and current and potential resources. These data will form the basis for design of community resource development models in the project's six sample urban and rural counties.

Duration: January 1976-June 1978.
Cooperating group(s): National Center on Child Abuse and Neglect, Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.

37-RH-8 THE APATHY-FUTILITY SYNDROME IN CHILD NEGLECT: AN URBAN VIEW

Investigator(s): Norman Polansky, Ph.D., Professor, School of Social Work, University of Pennsylvania, 3701 Locust Walk C-3, Philadelphia, Pennsylvania 19174.
Purpose: To study the causes of child neglect by focusing on the personalities of the parents and their interaction; and to study support or lack of it found in their social context.
Subjects: 50 neglectful and 50 non-neglectful families. All families are low income, white, and have a child, age 4 to 7, in the home.
Methods: This project will continue research started in the past in southern rural Appalachia (Polansky, Borgman, and DeSaix, 1972) on the causes of marginal child care and neglect. Specific issues being investigated are (1) precipitating factors in the family that contribute to child neglect, (2) factors differentiating families in which neglect occurs from those in which it does not, and (3) consequences of neglect for the child. Special attention is given to the mother's character structure, dynamics, and life situation. Facets of the father's personality and of nuclear and extended family structures will be investigated in their relation to neglect. The data will be collected by trained social workers, and data collection involves interviewing parents, making observations during home visits, and administering tests to mothers and children. Tests include the Childhood Level of Living Scale (revised for an urban group), Anomie Scales, a condensed version of the PARI, and a full clinical battery of psychological tests. Parent interviews are designed to obtain a complete psychiatric social history on the mother (her familial origins, present marital situation, and finances). The child is rated on personality characteristics (withdrawn, hostile, clinging) and is evaluated for nutritional status. An attempt will be made to obtain physicals on the mother and child. The relatively great significance of the apathy-futility syndrome in maternal reactions will also be investigated. A spin-off study will be done with upper middle class families.
Duration: June 1975-June 1977.
Cooperating group(s): National Center on Child Abuse and Neglect, Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.
Publications: (1) Polansky, N. A.; Borgman, R. D.; and DeSaix, C. *Roots of futility*. San Francisco: Jossey-Bass, Inc., 1972. (2) Polansky, N. A.; DeSaix, C.; and Sharlin, S. *Child neglect: Understanding and reaching the parent*. New York: Child Welfare League of America, 1972.

37-RH-9 INVESTIGATION OF THE EFFECTS OF A MULTIDIMENSIONAL SERVICE PROGRAM ON RECIDIVISM/DISCONTINUATION OF CHILD ABUSE AND NEGLECT

Investigator(s): Roy C. Herrenkohl, Ph.D., Professor, Department of Social Relations, Director; and Ellen C. Herrenkohl, Ph.D., Research Scientist, Center for Social Research, Lehigh University, 10 West Fourth Street, Bethlehem, Pennsylvania 18015.
Purpose: To identify and investigate recidivism or discontinuation of abuse and or gross neglect in families that have received varying types and amounts of intervention services.

Subjects: Approximately 380 families that have received intervention services from a child abuse prevention program in Lehigh Valley, Pennsylvania since 1968.
Methods: This research is focused on assessing the social, psychological, and ecological conditions of parents cited in the past for abuse and/or neglect. Parental variables assessed include: the quality of their perceptions of their children; the quality of the marital relationship; the appropriateness of parental expectations for their children; financial, employment, and housing status; and rapport with the interviewer. Case record data and interview data, on families referred to the local Children's Bureaus from 1968 to 1974, will be gathered and scored to identify recidivism and/or discontinuation rates and changes in the family's social, psychological, and ecological situation since the time of initial referral (N = 180). Similar data will be gathered on families that will be served by the program in the next 2 years (N = 200). Effectiveness will be measured by discontinuation rate and self-reported improvement along the above dimensions. Dissemination activities are planned, and statistics will be developed on family and child demographic, social, and psychological variables.
Duration: June 1975-May 1977.
Cooperating group(s): (1) Lehigh County Children's Bureau. (2) Northampton County Children's Bureau. (3) Lehigh County MH/MR. (4) Northampton County MH/MR. (5) Head Start of the Lehigh Valley. (6) Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.

37-RH-10 CHILD ABUSE AND NEGLECT MEASUREMENT AND MACROEVALUATION PROJECT

Investigator(s): James R. Seaberg, Ph.D., Research Assistant Professor, Center for Social Welfare Research, School of Social Work, University of Washington, 1417 N. E. 42nd Street, Seattle, Washington 98195.
Purpose: To develop measures that can be used to evaluate the outcome of services to cases of child abuse and neglect; and to develop a model and methodology for conducting macroevaluations of child welfare problems.
Methods: This investigation will emphasize the development of appropriate measurement techniques to evaluate demonstration centers. The investigator will visit demonstration centers to determine the specific aspects of the program content that need to be measured. The measures to be developed cluster into two major groups: treatment measures, and prevention and identification measures. Four specific kinds of measurement occur within the treatment cluster. Indices of the severity of the abuse and neglect situation, typologies of perpetrator behavior, a systematized recording system to provide data on all dimensions of the services, and a variety of outcome measures and measures related to continuity of service will be developed. Prevention and identification measures will be developed including measures related to referrals and measures to assess the impact of 24-hour hotline services. The project staff also plans for product review and to disseminate and utilize the developed measures.
Duration: June 1975-May 1977.
Cooperating group(s): National Center on Child Abuse and Neglect, Office of Child Development, Office of Human Development, U. S. Department of Health, Education, and Welfare.

37-RH-11 COMPARATIVE EVALUATION OF TWO COMMUNITY PROTECTIVE SERVICE SYSTEMS

Investigator(s): Clara L. Johnson, Ph.D., Research Associate, Regional Institute of Social Welfare Research, University of Georgia, 1260-80 South Lumpkin Street, P. O. Box 152, Athens, Georgia 30601.

Purpose: To evaluate two protective service systems in terms of the mechanisms for the identification and the handling of child abuse and neglect cases and the effectiveness of intervention.

Subjects: Level II data, the data base for issues relevant to systems input, output, and outcome are case data from agency records of reported cases in both sites. Cases of two basic types will be analyzed: isolated incidents and serial abuse/neglect cases.

Methods: This study was conceptualized in two levels. The first level was reported in *Research Relating to Children, Bulletin 34*, September 1974-February 1975, Study 34-RH-2, pp. 133-134. Level II involved research utilizing the exploratory descriptive design. Structured interviews were completed with protective service staff. A structured schedule was used to which case data were transferred from agency records. The criteria used to evaluate cases were recidivism, severity of subsequent injuries, length of time between reported incidents, rehabilitation of perpetrator, and disposition of agency.

Duration: Spring 1974-Summer 1976.

Cooperating group(s): Social and Rehabilitation Service, U. S. Department of Health, Education, and Welfare.

Publications: Results of the study will be printed in monograph form and distributed nationally according to the policy of the Regional Institute of Social Welfare Research or may be purchased from the investigator.

37-RH-12 LIFE CRISIS AS A PRECURSOR TO CHILD ABUSE

Investigator(s): Blair Justice, Ph.D., Professor of Social Psychology; and David F. Duncan, Dr.P.H., Research Statistician, School of Public Health, Health Science Center, University of Texas, P. O. Box 20186, Astrodome Station, Houston, Texas 77025.

Purpose: To examine the role of life crisis in the etiology of child abuse.

Subjects: 35 abusing parents and 35 matched controls who had experienced problems with their children but who had not abused their children.

Methods: In this investigation, life crisis is defined as "a stress state induced by an excessive frequency of life change events." Both groups of subjects completed a Survey of Recent Experience indicating the number of life changes they had experienced during the year before the onset of their problem with their child (abuse or other problem in the case of the controls). These events were scored according to the Holmes/Rahe Social Readjustment Rating Scale (SRRS). The two groups were compared by t-test and chi-square test of their SRRS scores.

Findings: The mean score of the nonabusing parents was 124, which does not indicate a life crisis as defined by Holmes and Rahe. The mean score of the abusing parents was 234, which indicates a moderate life crisis. These means differ significantly at the .001 level by t-test. Distributions differ at .001 by chi-square.

Duration: January 1975-completed.

Cooperating group(s): (1) Harris County Child Welfare Unit. (2) Texas Research Institute of Mental Science.

Publications: Justice, B. and Duncan, D. F. Life crisis as a precursor to child abuse. *Public Health Reports*, 1976, 91(2), 110-115.

HEALTH SERVICES

37-SA-1 DEVELOPMENTAL EFFECTS OF LOW LEVEL LEAD EXPOSURE

Investigator(s): Herbert L. Needleman, M.D., Associate in Psychiatry, Children's Hospital Medical Center, Ender's Pediatric Research Building, 300 Longwood Avenue, Boston, Massachusetts 02115.
Purpose: To determine the developmental effects of low level lead exposure.
Subjects: 3,000 first grade girls and boys.
Methods: Past exposure to lead in unidentified children is measured by analyzing the amount of lead in their deciduous teeth. After identification, children in the upper levels of lead burden are matched with children who have low level burdens. A panel of neuropsychological tests will be given to the children. Data will be analyzed so that confounding variables are stratified and the relationship of lead burden to neuropsychologic function will be determined.
Duration: June 1975-May 1978.
Cooperating group(s): Departments of Health and School Systems in Chelsea and Somerville, Massachusetts.

37-SC-1 CLINICAL FIELD TRIAL TO ASSESS THE COST EFFECTIVENESS OF VARIOUS CARIES PREVENTIVE MEASURES

Investigator(s): Neville Doherty, Ph.D., Associate Professor; Elbert Powell, D.D.S., Associate Professor; and Martyn Smith, Ph.D., Assistant Professor, School of Dentistry, Health Center, University of Connecticut, Farmington, Connecticut 06032.
Purpose: To assess the cost effectiveness of various preventive dental measures in a community with an unfluoridated water supply.
Subjects: 2,000 children, ages 11 to 13. Demographic characteristics are randomly distributed among groups.
Methods: This investigation involves three primary treatments: topical fluoride, fluoride mouthrinse, and pit and fissure sealants, tested individually and in all combinations. A total of seven experimental treatments and a basic control (null) treatment will be used in the study. Clinical procedures will be provided by dentists and hygienists utilizing portable dental equipment in six junior high schools. The field trial phase will last 3 years and a fourth year will involve final examinations and statistical cost effectiveness analyses. Effectiveness of the treatments will be measured by the level of reduction in the number of new caries observed during the study, and treatment costs will be measured by the value of the resources used.
Duration: April 1975-December 1979.
Cooperating group(s): National Institute of Dental Research, National Institutes of Health, Public Health Service, U.S. Department of Health, Education, and Welfare.

37-SD-1 INTRAUTERINE GROWTH AND NEONATAL RISK IN CALIFORNIA

Investigator(s): George C. Cunningham, M.D., Chief, Maternal and Child Health Branch; Warren E. Hawes, M.D., Chief, Perinatal Health Section-MCH; and Frank D. Norris, M.A., Senior Statistician, CHS; California State Department of Health, 2151 Berkeley Way, Berkeley, California 94704; and Ronald L. Williams, Ph.D., Associate Research Economist, Community and Organization Research Institute, University of California, Santa Barbara, California 93106.

Purpose: To provide the medical community with appropriate standards for assessing the adequacy of intrauterine growth and neonatal risk for California newborns.

Subjects: 1,424,637 single and 29,837 multiple live births in California from 1966 to 1970.

Methods: Data were gathered on birthweights, derived from matched birth and infant death certificates and were stratified according to ethnic group, sex, and plurality. The data were graphed giving the 10th and 90th percentile curves of intrauterine growth, and, where sufficient information was available, the numerical risk of neonatal death per 1,000 live births was determined. Figures were also drawn for the three major ethnic groups (white non-Spanish surname; white Spanish surname; and black) by sex, and totals for sex and plurality were also plotted if they contained sufficient data to be statistically sound and of clinical use. Figures for smaller subpopulations were included for reference.

Findings: There are demonstrated differences, of clinical significance, in intrauterine growth rates between single and multiple births, males and females, and various ethnic groups. Even larger differentials are observed for neonatal loss across the subpopulations. California's 10th percentile of growth is noticeably higher after 29 weeks of gestation than that of another frequently used chart. As this percentile is commonly used to determine the small for dates infant, potential misclassifications by use of other data could be unacceptably high.

Duration: 1973-completed.

Publications: Copies of the monograph, including the 24 intrauterine growth charts, are available from the Perinatal Health Section, California State Department of Health.

37-SD-2 THE EFFECT OF COMPREHENSIVE HEALTH CARE DELIVERED BY FULLY TRAINED PEDIATRICIANS

Investigator(s): Kenneth S. Osgood, M.D., M.P.H.; and George Runch, M.D., Las Vegas Clinic for Children and Youth, 501 - 7th Street, Las Vegas, New Mexico 87701.

Purpose: To determine what effect, if any, has been made on the health status of a population of children by newly introduced, full-time, comprehensive health care delivered by fully trained pediatricians previously handled by generalists.

Subjects: All children, under age 15, residing in a rural Rocky Mountain region.

Methods: Data taken before and after the pediatricians arrived included (1) the number of pediatric patient days and the number of hospitalizations, per 1,000 children; and (2) the infant mortality, neonatal mortality, and low and nonlow birthweights. These data were also taken on a control population that had, and on a population that did not have, a pediatrician. The incidence of chronic diseases identified by the pediatrician while in his office was also determined.

Findings: The preliminary results indicate there was a decrease in patient days and hospitalizations after the pediatricians arrived, and there were lower hospitalization rates in the control areas where pediatricians practice. The results also indicate a decrease in neonatal death rates after the arrival of the pediatricians.

Duration: 1975-1976.

Cooperating group(s): (1) American Academy of Pediatrics. (2) New Mexico State Department of Vital Statistics. (3) New Mexico Chapter of the American Cancer Society. (4) New Mexico Northern Regional Hospitals.

37-SD-3 CORONARY HEART DISEASE HEALTH EDUCATION

Investigator(s): Joyce W. Hopp, Ph.D., M.P.H., Associate Professor; Roland Philips, M.D., Dr.P.H., Professor of Epidemiology; and Grenith Zimmerman, Ph.D., Associate Professor of Biostatistics, School of Health; and Mary Gandy, M.D., Pediatrician, School of Medicine, Loma Linda University, Loma Linda, California 92354.
Purpose: To explore the feasibility of an educational program for parents and children identified in the high risk bracket for coronary heart disease (CHD).
Subjects: Seventh and eleventh graders in the Yucaipa School District, who have been identified as exhibiting high risk factors for CHD; and their parents.
Methods: All seventh and eleventh graders will be screened for ponderal index (height, weight, skinfold), blood pressure, cholesterol levels, exercise patterns, and smoking habits. Children in the upper 15 percent and their parents will participate in an educational intervention aimed at reducing or changing this risk factor pattern. The educational program is designed to lower their weight, if overweight; lower serum cholesterol; stop their smoking; and to increase the amount and to change the kind of exercise in which they engage. They will be retested at 5 months and 1 year to determine if significant changes have occurred.
Duration: May 1976-October 1977.
Cooperating group(s): Yucaipa Joint Unified School District.

37-SD-4 SUDDEN INFANT DEATH SYNDROME

Investigator(s): Robert B. Mellins, M.D., Professor of Pediatrics and Director, Pediatric Pulmonary Division; Ralph A. Epstein, M.D., Professor of Anesthesiology; John M. Driscoll, M.D., Associate Professor of Clinical Pediatrics; and Ehud Krongrad, M.D., Assistant Professor of Pediatrics, College of Physicians and Surgeons, Columbia University, Columbia-Presbyterian Medical Center, 622 West 168th Street, New York, New York 10032; and Mary Anne Farrell-Epstein, Ph.D., Professor of Chemical Engineering, School of Engineering, Columbia University, Morningside Heights, New York 10026.
Purpose: To evaluate and follow up selected respiratory, cardiac, and neurophysiologic parameters in normal infants and infants believed to be at high risk for Sudden Infant Death Syndrome (SIDS).
Subjects: 20 male and female infants, ages 0 to 4 months, who will be followed for 1 year. Half of the infants are normal; half are high risk.
Methods: In this investigation high risk infants are defined as "those who have had life threatening cessation of breathing (apnea) and have turned blue (cyanosis)." All measurements will be made noninvasively in a whole body plethysmograph. Ventilation will be measured using an original modification of the barometric method so that no face masks, neck seals, etc., are necessary. Tests will indlude electroencephalogram, electro-oculogram, electromyogram, and electrocardiogram. Time series analysis of the data will be carried out to detect periodicities in the data.
Duration: July 1975-June 1979.

37-SD-5 IMPROVEMENT IN INFANT AND PERINATAL MORTALITY IN THE UNITED STATES: 1965 TO 1973

Investigator(s): Victor Eisner, M.D., M.P.H.; Marion Johnson Chabot, M.D., M.P.H.; and Alfred Hexter, M.A., Maternal and Child Health Program, School of Public Health, University of California, Berkeley, California 94720; and Naresh C. Sayal, M.S., Re-

search Associate; and Margaret W. Pratt, A.B., Senior Research Analyst, Maternal and Child Health Studies Project, Information Sciences Research Institute, Suite 506, 1725 Eye Street, N.W., Washington, D. C. 20006.

Purpose: To identify portions of the infant and perinatal mortality problem where major impact can occur in establishing federal and state goals for reducing mortality.

Subjects: All infants and perinatal deaths in the United States from 1965 to 1973. In the records examined there were 31,672,093 live births; 667,157 infant deaths; and 458,940 perinatal deaths (less than 20 weeks gestation).

Methods: Data from the National Center were used to compute infant mortality and perinatal mortality rates. The mortality rates were computed at age of death or gestation period by state. Degree of urbanization was computed for 56 cities with populations under 250,000. A regression analysis was done for each category computing rates of decline from 1965 to 1973. A log-linear regression analysis model was used.

Findings: Postneonatal infant mortality rate improved more in rural than urban areas from 1965 to 1973. Postneonatal rates improved more than neonatal and fetal rates. Rates for other-than-whites declined more than for whites at all ages except deaths at less than 1 day, where the rate of decline was approximately the same.

Duration: August 1975-June 1976.

Cooperating group(s): Office of Clinical Services, Bureau of Community Health Services, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare.

37-SD-6 INFANT AND PERINATAL MORTALITY RATES BY AGE AND RACE

Investigator(s): Vince L. Hutchins, M.D., M.P.H., Director, Division of Clinical Services, Health Services Administration, U. S. Department of Health, Education, and Welfare, 5600 Fishers Lane, Rockville, Maryland 20852; and Margaret W. Pratt, A.B., Director; Naresh C. Sayal, M.D., Research Associate; and Zelda L. Janus, B.S., Research Associate, Maternal and Child Health Studies Project, Information Sciences Research Institute, Suite 506, 1725 Eye Street, N.W., Washington, D.C. 20006.

Purpose: To provide information for health planners in relation to infant and perinatal mortality rates for three time periods.

Subjects: All input deaths in the United States for 1961 to 1965, 1966 to 1970, and 1969 to 1973 were related to births for 3,132 counties.

Methods: Infant mortality rates were computed for the three time periods for each geographic area. The population at risk in each county was shown by race. Statistically significant changes were indicated for changes from 1961-1965 to 1966-1970 and 1961-1965 to 1969-1973. For each rate counties were ranked and decile of rank was shown.

Findings: Decile distribution of counties is shown for each state with percent of counties in best decile. Rates of other-than-white rates to white rates are shown for the United States. The ratios in the latest time period are smallest but the postneonatal rate is still as high as 2.28. Twenty-seven counties still have more than 400 excess deaths in 1969 to 1973 with excess deaths defined as "all those occurring at a rate higher than 12.9 per 1,000 live births." The 12.9 per 1,000 live births rate is the 10th percentile rate where all county rates are ranked.

Duration: August 1975-January 1976.

Publications: The report is available from: Information Sciences Research Institute.

37-SD-7 NATALITY ANALYSIS

Investigator(s): Hyman Goldstein, Ph.D., Research Biostatistician; and Alfred Hexter, M.A., Maternal and Child Health Program, School of Public Health, University of California, Berkeley, California 94720; and Margaret W. Pratt, A.B., Senior Research Analyst, Maternal and Child Health Studies Project, Information Sciences Research Institute, Suite 506, 1725 Eye Street, N.W., Washington, D. C. 20006.

Purpose: To determine the relationships of various factors to birthweight and birthweight and gestation.

Subjects: Birth records in 1973 from Colorado, Florida, Maine, Michigan, Missouri, New Hampshire, New York (excluding New York City), Rhode Island, and Vermont, and a 50 percent sample of other states, New York City, and the District of Columbia. Single births only were recorded.

Methods: Factors possibly related to birthweight and birthweight and gestation are: gestation, race, maternal age, education, onset of prenatal care, wedlock status, parity, gravidity, and interpregnancy interval. The Mantel-Haenozel X^2 procedures will be used to test comparisons for each race on the following variables: (1) previous reproductive history and combined birthweight/gestation; (2) interpregnancy interval and combined birthweight/gestation; (3) wedlock status and combined birthweight/gestation; and (4) onset of prenatal care and combined birthweight/gestation. Data will also be statistically treated by logistic regression analysis using birthweight/gestation as the dependent variable.

Duration: January 1976-December 1976.

Cooperating group(s): Office of Clinical Services, Bureau of Community Health Services, Health Services Administration, Public Health Service, U. S. Department of Health, Education, and Welfare.

37-SE-1 EVALUATION OF THE EFFECTS OF CONTRACEPTIVE AGENTS, RELATED METHODS AND PROCEDURES, AND THE FREQUENCY OF BIRTH DEFECTS

Investigator(s): Dwight T. Janerich, D.D.S., M.P.H., Director, Genetic Oncology, Cancer Control Bureau, New York State Health Department, ESP Tower Building, Albany, New York 12237.

Purpose: To detect any association between contraceptive practices and subsequent birth defects.

Subjects: Approximately 700 mothers of children born with limb reduction defects (100 mothers), anencephaly and spina bifida (200), hypospadias (100), Down's syndrome (100), cardiovascular defects (100), and multiple malformations (100); and a matched group of 700 mothers of normal infants.

Methods: In this investigation case and control mothers were interviewed by telephone and queried about their reproductive history and contraceptive use and practices during the year before conception of the index child.

Findings: The use of exogenous sex steroids during pregnancy, including oral contraceptives, is associated with an increased risk of bearing a child with a limb reduction defect. In mothers of normal children, fertility following oral contraceptive use is diminished and then peaks at 3 months. Mothers of children with Down's syndrome report less oral contraceptive use than their matched controls.

Duration: August 1974-August 1976.

Cooperating group(s): National Institutes of Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

Publications: (1) Janerich, D. T. *et al.* Down's syndrome and oral contraceptive use. *British Journal of Obstetrics and Gynecology*, 1976, 83 (in press). (2) Janerich, D. T. *et al.* Fertility patterns following oral contraceptive use. *Lancet*, 1976, i, 1051. (3) Janerich, D. T. *et al.* Oral contraceptives and congenital limb reduction defects. *New England Journal of Medicine*, 1974, 291, 697-700.

37-SG-1 ASSESSMENT OF MENTAL NEEDS AND SERVICES IN VANCOUVER

Investigator(s): Malcolm S. Weinstein, Ph.D., Senior Psychologist; and Douglas A. Bigelow, Ph.D., Director, Evaluation and Planning, Mental Health Services, City of Vancouver Health Department, 1060 West 8th Avenue, Vancouver, B. C., Canada V6H 1C4.

Purpose: To assess present mental health needs and services for children, adolescents, and their families, in order to plan, develop, implement, coordinate, and continuously evaluate more efficient and effective mental health services.

Subjects: A total sample of service agencies and a selected sample of administrators, front line workers, and clients.

Methods: The research consists of two phases. Phase I involves the collation and summary of existing studies of needs and services within a conceptual framework, and Phase II involves a comprehensive assessment of needs and services. Phase II will be completed through interviews with services agencies, administrators, front line workers, and clients. Nominal group processes for community input will be examined, and development of overall planning and evaluation format will be completed (including procedures for monitoring service activities, costs, and benefits).

Duration: May 1976-September 1977.

Cooperating group(s): (1) Vancouver School Board. (2) British Columbia Department of Human Resources. (3) British Columbia Department of Corrections. (4) British Columbia Department of Education. (5) Vancouver General Hospital, Section of Psychiatry.

37-SH-1 ACCIDENTAL INGESTION OF TOXIC SUBSTANCES AMONG CHILDREN

Investigator(s): John A. Coulter, Assistant Dean, School of Pharmacy, State University of New York, Buffalo, New York 14226.

Purpose: To gather information about incidents of accidental childhood poisoning, with an ultimate goal of determining how to improve emergency medical care for such cases.

Subjects: 320 parents with children under age 10. Only one parent of each family was interviewed — usually the mother.

Methods: The survey was conducted by telephone and eligible respondents were located by a random digital dial procedure. The interview schedule was designed to collect data on (1) background characteristics of respondents, (2) information on the occurrence of poisoning incidents, (3) steps taken by the parent(s) when the incident occurred, (4) knowledge of parent(s) about what should be done in such incidents, and (5) information on the location and availability of emergency medical facilities and services.

Duration: June 1975-January 1976.

Publications: Results of the research are available from the investigator: John A. Coulter, Office of the Dean, School of Medicine, SUNY Stony Brook, Stony Brook, New York 11974.

37-SH-2 BICYCLE ACCIDENTS AND USAGE AMONG ELEMENTARY SCHOOL CHILDREN IN THE UNITED STATES

Investigator(s): Thomas W. Chalapecka, Stuart A. Schupack, Thomas W. Planek, Nancy M. Klecka, and Gerald J. Driessen, National Safety Council, 425 North Michigan Avenue, Chicago, Illinois 60611.

Purpose: To gather data on bicycle accidents and the use of bicycles by elementary school children in the United States.

Subjects: 23,699 elementary school age bicyclists from 120 schools, 80 cities, and 34 states.

Methods: A nationally representative sample was used to collect data on bicycle riders, their bicycles, their use of the bicycle on the last riding day (exposure) and accidents that occurred in the past 5 years with emphasis on those occurring in the last 12 months. Accident details were requested for incidents that caused bicycle damage or any injury. Subphases of the study will deal with a literature review, a teacher evaluation of the National Safety Council's "All About Bikes" program, and an exploration of methods for gathering information on adult bicycle accidents and usage.

Findings: The group sample averaged 48 incidents per year, an estimated annual mileage of 677 miles, and a rate of .72 accidents per 1,000 miles. Interrelationships were identified between accident details and age, sex, experience, type of bicycle, injury treatment, geographic area, city size, and other pertinent variables. A review of selected studies on bicycle safety was included with the final results.

Duration: March 1975-completed.

Cooperating group(s): Schwinn Bicycle Company, Chicago, Illinois.

Publications: A copy of this report is available from the National Technical Information Service, U. S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22151 ($5.75). Order #PB 242-527.

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Abstracts of Hospital Management Studies (quarterly), the Cooperative Information Center of Hospital Management Studies, University of Michigan, 220 East Huron Street, 419 City Center Building, Ann Arbor, Michigan 48108.

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Communication Disorders, Information Center for Hearing, Speech, and Disorders of Human Communication, The Johns Hopkins Medical Institutions, 310 Harriet Lane Home, Baltimore, Maryland. 21205.

Current Awareness Service (monthly), the Institute for Research into Mental and Multiple Handicap, 16 Fitztroy Square, London WIP 5HQ, England. The service provides a listing of newly published journal articles; new books are listed every 2 months; and there is a monthly guide to forthcoming professional meetings in the field. Request a Publications List from Denise McKnight, Information Officer.

Current Index to Journals in Education (monthly), Macmillan Information, A Division of Macmillan Publishing Corporation, Inc., 216R Brown Street, Riverside, New Jersey 08075.

Dissertation Abstracts, University Microfilms, Ann Arbor, Michigan 48103. (Gives synopses of U.S. doctoral dissertations with an annual index.)

dsh Abstracts, Deafness, Speech and Hearing Publications, Gallaudet College, Washington, D.C. 20002.

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ERIC Clearinghouse on Early Childhood Education, Publications Office, 805 West Pennsylvania Avenue, Urbana, Illinois 61801, publishes a quarterly newsletter; subscription, $2.00. Also available free, a List of Publications relating to children, ages 0 through 12.

Exceptional Child Education Abstracts (quarterly), The Council for Exceptional Children, Box 6034, Mid City Station, Washington, D. C. 20005.

Excerpta Medica Foundation, New York Academy of Medicine Building, 2 East 103rd Street, New York 10029, and 119-123 Herengracht, Amsterdam C, The Netherlands, has established an abstracting service on pediatrics, available on a yearly subscription basis. In addition to abstracts, the Foundation provides to subscribers, at cost, photocopies and translations of complete articles.

Health Economic Studies Information Exchange, Division of Medical Care Administration, Public Health Service, Washington, D. C. 20402.

Index Medicus, National Institutes of Health. Order from Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

Language and Language Behavior Abstracts (quarterly), Center for Research on Language and Language Behavior, University of Michigan, Ann Arbor, Michigan 48104. Order from Subscription Manager, LLBA, Meredith Publishing Co., 440 Park Avenue South, New York, New York 10016.

National Bureau of Child Welfare Library (Voor Kinderbescherming), Stadhouderslaan 150, The Hague, The Netherlands, publishes abstracts of articles in the field of child welfare each month. The articles are in Dutch, but those familiar with the Universal Decimal System would be able to understand something about the articles. The subscription rate for documentation on cards is 30 guilders (approximately $8.40).

National Easter Seal Society for Crippled Children and Adults Library has initiated a photoduplication service for persons engaged in rehabilitation research. It is available without charge to personnel in education or research institutions and health or welfare agencies, public or private. This service may provide professional literature that is not available in local libraries. For information, write: Librarian, National Easter Seal Society, 2023 West Ogden Avenue, Chicago, Illinois 60612.

Nutrition Abstracts and Reviews, Commonwealth Bureau of Animal Nutrition, Bucksburn, Aberdeen AB2 9SB, Scotland.

Poverty and Human Resources Abstracts (bimonthly), Institute of Labor and Industrial Relations, University of Michigan-Wayne State University, P. O. Box 1567, Ann Arbor, Michigan 48106.

Psychological Abstracts, American Psychological Association, 1333 — 16th Street, N.W., Washington, D. C. 20036.

Rehabilitation Literature, National Easter Seal Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago, Illinois 60612.

Research in Education (monthly), Computer Microfilm International Corporation, P. O. Box 190, Arlington, Virginia 22210.

Science Information Exchange, Smithsonian Institution, 209 Madison National Bank Building, 1730 M Street, N.W., Washington, D. C. 20036 provides to qualified investigators, for a fee, selected abstracts of current research supported by foundation or government grants. The exchange covers such fields as medicine, nursing, public health, nutrition, psychology, education, anthropology, mental health, and intercultural relations.

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